

REPORT

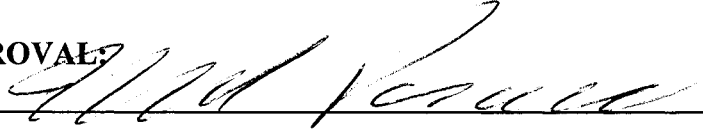
DATE: December 6, 2007

TO: Community, Economic, and Human Development Committee

FROM: Douglas Kim, SCAG Consultant; (213) 236-1967, kimd@scag.ca.gov

SUBJECT: Draft Regional Comprehensive Plan (RCP) Process and Outreach Strategy

EXECUTIVE DIRECTOR'S APPROVAL:



RECOMMENDED ACTION:

Approve Regional Comprehensive Plan (RCP) process, outreach strategy, and release of Draft RCP.

BACKGROUND:

The RCP is an advisory policy document that responds to Regional Council direction to look at regional challenges and develop a vision to address them. It lays out a path forward for consideration by SCAG, local governments, and other stakeholders in the region.

On November 1, 2007, the CEHD approved for release the Draft RCP's Executive Summary, Land Use & Housing and Economy chapters; the Energy and Environment Committee approved for release the Energy, Open Space & Habitat, Air Quality, Solid Waste and Water chapters; while the Transportation and Communications Committee approved for release the Transportation and Security & Emergency Preparedness chapters. The Regional Council then directed staff to 1) prepare Program Environmental Impact Report (PEIRs) for the RCP and the Regional Transportation Plan, 2) authorized an additional \$150,000 to prepare the RCP PEIR, and 3) committed to completing the RCP process and considering its adoption in an expeditious manner.

Based on these actions, SCAG staff has developed a recommended RCP process that is based on an extensive public outreach process that allows for ample public review and dialogue yet does not interfere with the release, public review, and adoption of the pending RTP. The RCP Task Force will consider these recommendations on November 19, 2007 and make a recommendation to CEHD for its consideration.

Recommended RCP Schedule

- | | |
|------------------------------|--|
| • December 6, 2007 | CEHD approves the RCP process, outreach strategy, and release of Draft RCP |
| • December 2007 – March 2008 | Outreach Phase 1: Develop base of awareness of sustainability and RCP issues through outreach while minimizing impacts to key RTP stakeholders. |
| • Mid-February 2008 | Release Notice of Preparation for RCP PEIR |
| • April – June 2008 | Outreach Phase 2: Expand public outreach, conduct regional workshops on policy directions for RCP, additional focused outreach to RTP key stakeholders |
| • Mid-April 2008 | Circulate Draft RCP PEIR for public review and comment |
| • May 2008 | RCP Task Force review of Preliminary Final RCP |

REPORT

- June 2008 CEHD approves Preliminary Final RCP and forwards to Regional Council
- July 2008 Regional Council action on the Final RCP and certification of PEIR

Upon formal release of the Draft RCP in early January, SCAG would distribute the document to an extensive mailing list that includes RCP and RTP stakeholders. This will ensure that all local governments; federal, State, and local public agencies' conservation organizations; the private sector; non-profit organizations; and other interested parties receive the Draft RCP for review and comment. All stakeholders can review the document on the RCP internet homepage, while major stakeholders would receive a CD-ROM and/or hard copy of the Draft.

The public outreach process would be implemented in two phases to honor the region's focus on the RTP. Upon release of the Draft RCP, Phase 1 would build awareness of key regional issues and the potential role of the RCP's sustainability recommendations. Following adoption of the RTP, Phase 2 would expand the public outreach focus, developing consensus on the RCP's recommended policies, and focus on opportunities to move regional initiatives forward. Ultimately, CEHD would review and recommend the Draft RCP and its accompanying PEIR for approval by the Regional Council.

FISCAL IMPACT:

Work performed for the Regional Comprehensive Plan is included in the current year SCAG Overall Work Program (08-035.SCGS1).

Reviewed by:


Division Manager

Reviewed by:


Department Director

Reviewed by:


Chief Financial Officer

Regional Comprehensive Plan Recommended Public Outreach Strategy

Goals

- Use extended public review period to build awareness of sustainability issues and the need for action through regional dialogue
- Build support for the RCP across region and stakeholder groups
- Lay groundwork for ongoing regional Action Plan

Overall Plan

Phase One: (Dec thru Mar)

- Develop base of awareness of sustainability and RCP issues
 - Build broad support amongst key RCP stakeholders by clarifying what they need to enhance their local efforts
 - Minimize impacts to RTP review by focusing on non-RTP key stakeholders
 - Brief elected officials (e.g., League of Cities, Councils of Government)
 - Host Sustainability Conference (see below)
 - Develop institutional frameworks
 - Refine regional working group and task force structure
 - Build partnerships with key public agencies and other stakeholders
 - Develop a baseline of the region's sustainability and integrated planning efforts
 - Survey jurisdictions
 - Online survey of public's recognition of regional challenges, support for sustainability policies
 - Improve print and electronic outreach
 - Circulate regular RCP newsletters
 - Highlight issues
 - Highlight potential role of RCP and its policies
 - Calendar of RCP events
 - Contact – how to get involved
- Enhance RCP website
- Online survey of public's recognition of regional challenges, support for sustainability policies
- Enhance RCP hotline
- Develop phone tree of options

Phase Two: (Apr thru Jun)

- Following adoption of the 2008 RTP, expand outreach
- Workshops on policy directions for RCP (See below)
- Continue newsletter
- Outreach focused on RTP key stakeholders

- P&P TAC
- Subregions
- County Transportation Commissions
- Regional Transportation Agencies Coalition
- Elected officials

Stakeholders
(preliminary--partial list)

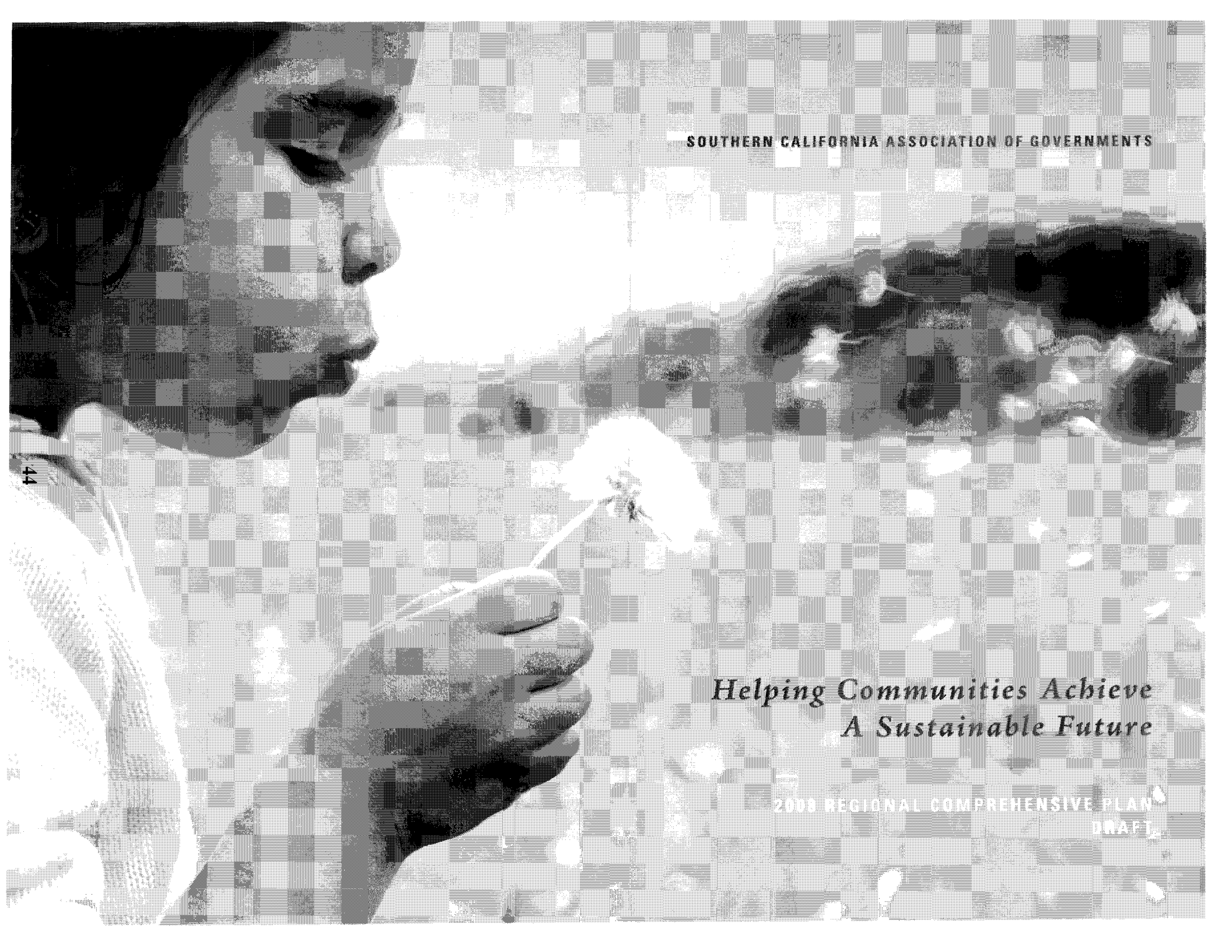
- SCAG Committees
 - Regional Council
 - CEHD
 - TCC
 - EEC
 - Plans & Programs TAC
 - Regional Transportation Agencies Coalition
 - RCP Task Force
 - Solid Waste Task Force
 - Energy Working Group
 - Open Space Working Group
 - Water Task Force
- Public Sector
 - Local governments
 - Subregions
 - Councils of Government
 - League of Cities
 - County Transportation Commissions
- Private Sector
 - Building Industry Association
 - Development
 - Chambers of Commerce
 - Economic Development Corporations
 - Environmental Organizations
- Conservation Organizations/Non-Profits
 - Open space and habitat organizations
 - Energy organizations
 - Solid waste advocates
 - Water resource and conservation organizations
 - Smart growth organizations
 - Air quality and public advocates
 - Environmental and social justice organizations

Sustainability Conference

- **Goals**
 - Expand awareness of sustainability issues and the need for action through regional dialogue
 - Highlight other regional efforts to promote sustainable planning
 - Identify challenges, opportunities, results
 - Lay groundwork for ongoing regional Action Plan
- **Agenda**
 - Define regional resource challenges
 - Discuss survey results regarding public awareness and support for sustainability planning
 - State of California perspective
 - Discuss state of sustainability planning in region
 - Panel spotlighting regional sustainability programs
 - Next steps
 - Discuss on-going regional Action Plan
 - Announce partnerships

RCP Workshops

- **Goals**
 - Expand awareness of sustainability issues and the need for action through regional dialogue
 - Discuss and debate RCP recommendations
 - Lay groundwork for ongoing regional Action Plan
- **Agenda**
 - Define regional resource challenges
 - Discuss survey results regarding public awareness and support for sustainability planning
 - Discuss state of sustainability planning in region
 - Discuss recommended RCP Priority policies
 - Define priority policies
 - Helps prioritize Action Plan
 - Next steps
 - Discuss on-going regional Action Plan



SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

*Helping Communities Achieve
A Sustainable Future*

2000 REGIONAL COMPREHENSIVE PLAN
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SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

**REGIONAL
COMPREHENSIVE
PLAN**

2008

Executive Summary	4
Regional Comprehensive Plan: Charting A Path For Southern California's Future	4
Forming A Vision And Implementing An Action Plan	7
Setting Priorities	9
Roles And Responsibilities	9
Relationship Of Rep To Compass Blueprint And The Regional Transportation Plan	11
Land Use and Housing	14
The Challenge	14
The Plan	15
Land Use And Housing Goals	16
Land Use And Housing Outcomes	17
Open Space and Habitat	24
The Challenge	24
The Plan	26
Natural Lands	27
Community Open Space	36
Agricultural Lands	42

Water	50
The Challenge	50
The Plan	59
Water Goals	59
Water Outcomes	60
Energy	68
The Challenge	68
The Plan	71
Energy Goals	75
Energy Outcomes	76
Air Quality	86
The Challenge	86
The Plan	89
Air Quality Goals	91
Air Quality Outcomes	91
Solid Waste	98
The Challenge	98
The Plan	99
Solid Waste Goals	109
Solid Waste Outcomes	109

Transportation	118
The Challenge	118
Demand on Our Transportation System	119
The Plan.....	120
Beyond the RTP.....	123
Transportation Goals	124
Transportation Outcomes	124
Security and Emergency Preparedness	130
The Challenge	130
The Plan.....	132
Economy	142
The Challenge	142
The Plan.....	144
Economy Goals	145
Economy Outcomes	146
Education Essay	152
Overview.....	152
Need for Joint-Use Community-Centered Development.....	153
Challenges of Joint-Use Community-Centered Development.....	154
Smarter Design Strategies.....	154
Exemplars of Joint-Use Community-Centered Development.....	156

Summary	159
Case Study	160
Mission Statement	163
Leadership, vision and progress which promote economic growth, personal well-being, and livable communities for all Southern Californians.	163
Regional Council Members	163



Executive Summary

2008

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REGIONAL COMPREHENSIVE PLAN

REGIONAL COMPREHENSIVE PLAN: CHARTING A PATH FOR SOUTHERN CALIFORNIA'S FUTURE

The Regional Comprehensive Plan (RCP) is a problem-solving guidance document that directly responds to what we've learned about Southern California's challenges through the annual State of the Region report card. It responds to SCAG's Regional Council directive in the 2002 Strategic Plan to develop a holistic, strategic plan for defining and solving our inter-related housing, traffic, water, air quality, and other regional challenges. Through extensive outreach and input from the RCP Task Force, SCAG's policy committees, subregions, local governments and other key stakeholders, the RCP is a collaborative effort to address our region's challenges and set a path forward.

The RCP sets a path forward in two key ways. First, it ties together SCAG's role in transportation, land use, and air quality planning and demonstrates why we need to do more than we're doing today. For example, while the RCP is based on the growth management framework of the Compass Blueprint, it further promotes environmental policies that help to "green" the region and lay the groundwork for a more robust 2012

update of the Regional Transportation Plan. Second, it recommends key roles and responsibilities for public and private sector stakeholders and invites them to implement reasonable policies that are within their control.

The result is a proactive, unconstrained, big-picture advisory plan that envisions what a livable, sustainable, successful region could look like and challenges us to tackle difficult issues. The RCP describes what could happen if current trends continue, defines a vision for a healthier region, and recommends an Action Plan that could get us there by 2035. By balancing resource conservation, economic vitality, and quality of life, it lays out a long-term planning framework that shows how we can respond to growth and infrastructure challenges in a comprehensive way.

Of course, there are many ways to address the region's challenges. As such, while the RCP recommends more integrated resource planning, *it does not mandate them*. Rather, local governments are asked to consider this Plan's recommendations in General Plan updates, municipal code amendments, design guidelines, incentive programs and other actions. The key is to begin talking about what the challenges are, define success, and implement solutions.



FAST FACTS*The Consequences of Inaction*

If these projected regional, national, and international changes continue to unfold, our region will go through profound changes. There are potentially troubling consequences if we fail to act now:

► **Land Use and Housing**

Lack of new housing in existing neighborhoods could result in increased land consumption in fringe areas.

► **Transportation**

As roadways get more congested, traffic speeds could drop to an average of 28 miles per hour during rush hour.

Solid Waste

Exporting waste to desert areas and beyond increases the economic and environmental costs of waste management.

The RCP is being developed to:

- Respond to the SCAG Regional Council's direction to develop a comprehensive plan that addresses the region's economic, social and environmental future as well as emphasizes the interdependence and ramifications of these various issue areas.
- Inform local, subregional, and county economic and resource plans that are often limited by geography or scope. For example, a county-wide resource plan for open space may fail to recognize the habitat value of linking to adjacent county open space plans.
- Help meet federal transportation planning requirements that call for more integrated resource planning, particularly more integration of environmental concerns into transportation plans through expanded consultation.
- Offer recommendations to local governments from a regional, comprehensive perspective for consideration into the development of local General Plans and the design and review of major development through the region's Intergovernmental Review process.
- Provide a regional response and strategy for meeting climate change mandates that call for reductions in greenhouse gases.
- Offer a comprehensive, integrated policy plan that helps position Southern California to get its fair share of revenue

from federal and state funding programs, such as the traffic, housing, water, and park infrastructure bonds approved in 2006.

- Help stakeholders make the most of their limited resources by highlighting priority policies for future implementation that maximize benefits both locally and regionally.

Ultimately, the RCP sets the stage for regional dialogue and begins a process to measure our performance. Success depends on the region's ability to agree on our challenges, evaluate policy options, and seek consensus. As the council of governments for Southern California, SCAG is uniquely positioned to work with its subregions and local governments membership to take a leadership role in sustainability planning to meet our needs of today without undermining our ability to do so in the future. As the region's metropolitan planning organization, SCAG can help prioritize federal and state funds for programs that support the RCP's vision and outcomes.

To that end, SCAG proposes to update the RCP on a regular basis in concert with the Regional Transportation Plan to reflect changes in legislation, technology, policy, and other variables.

Assessing Our Challenges

Southern California is witnessing historic change at the global, national, and regional level. As our world continues to change

in sometimes dramatic ways, Southern California is increasingly faced with tougher policy choices that will shape our region for generations to come:

- As we add over 7 million more residents to our region by 2035, our ability to coordinate growth and infrastructure will determine how we consume our finite resources, whether it's open space, water, or even roadway capacity. Furthermore, policy initiatives like the Southwest Alliance can be used to coordinate growth and infrastructure planning with our partners in Kern County, San Diego County, and even Mexico.
- Making a real dent in traffic congestion is getting tougher and more expensive. Our region must explore new initiatives that can reverse decades of worsening mobility and make tomorrow's commute better than today. If we don't develop new initiatives to address how people and freight move, average freeway speeds will slow to 28 mph while the economic, environmental, and public health costs of congestion will continue to rise.
- After decades of steady progress, our air quality improvements have leveled off as growth has begun to offset the technological advancements that have served us well until now. Today, we face an air quality crisis, with more than 5,000 premature deaths from fine particulate matter. We must respond to more stringent air quality standards for PM_{2.5} (particulate matter smaller than 2.5 microns in diameter) and even unregulated smaller pol-

lutants called nanoparticles by reducing our reliance on diesel and other petroleum-based, combustion engines.

- The future of our energy supply is becoming uncertain. We are increasingly dependent on imported petroleum, natural gas, and coal, which account for 85 percent of our energy use. As we question the long term viability of a petroleum-based energy future, we must explore non-combustion-based energy sources.
- Our water supplies are increasingly threatened by pollution, and growth is often limited by whether there's adequate supply. The quality of our surface and groundwater supplies is equally important and must be protected through better management practices.
- Our economy continues to become more service- and technology-oriented, with manufacturing outsourced to other regions and other countries. Today, the freight movement and logistics industries fuel much of our local economy. Over time, our region needs to find a balance that promotes regional economic sustainability through promotion of local industries while recognizing its important link to the global economy.
- We have to rethink our current waste management approaches and realize that waste is the result of the inefficient use of our limited, natural resources. Our region generates over 80 million tons of trash each year. Burying the problem in landfills does not make it go



FAST FACTS*The Consequences of Inaction***► Energy**

■ Estimates indicate up to 100 more days per year with temperatures above 90 degrees Fahrenheit in L.A.

■ Higher temperatures and lower snowpack due to global warming could reduce hydropower generation, reducing California's in-state power production by 5 percent.

► Air Quality

■ With a potential 3 to 10.5 degree rise in temperature due to climate change, extremely hot days could double to 72 per year.

■ Higher temperatures could hinder our air quality goals resulting in 85 percent more days conducive to ozone formation in the L.A. Area.

away. We need to address this issue by reducing waste, reusing materials, recycling, and developing alternative technologies.

In addition, forces on the national and international scale are impacting our region:

- **Climate change.** The body of scientific evidence shows that our global climate is heating up at unprecedented rates that threaten life as we know it. The vast Southern California region has contributed to the highest CO₂ emissions levels in recorded history. This threatens to impact all aspects of our communities, whether it's reduced water supplies, habitat loss, increased air pollution, or public health impacts. The secondary effects of climate change are almost as troubling; for example, hotter cities need more cooling, which increases power plant usage that contributes further to the vicious cycle of greenhouse gases.
- **Energy uncertainty.** As the peak of the world's petroleum production rate is reached, there could be profound consequences to our region's economy. Southern California's transportation, agricultural and industrial systems are highly dependent on inexpensive oil. Any production decline and resulting price increases will have negative implications for the global and regional economy; the severity will depend on the rate of production decline and the linked increases in prices and our ability to find alternatives for petroleum.

- **Global economy.** If Southern California were a country, we'd be the 15th largest economy in the world. In this globalized economy, our region is increasingly susceptible to outside influences like international economic downturns that pose further challenges.

These challenges call for action, because the consequences of inaction are potentially devastating (see the "Fast Facts" sidebar). This need for action is all the more urgent because all of these issues are tightly linked. For example, failure to address land use and housing issues have direct and indirect impacts on air quality and public health.

FORMING A VISION AND IMPLEMENTING AN ACTION PLAN

The RCP is a structured policy framework that links broad visionary principles to an action plan that moves the region towards balanced goals. The following vision statement and guiding principles are based on the region's adopted Compass Growth Vision Principles for Sustaining a Livable Region. These statements further articulate how the RCP can promote and sustain the region's mobility, livability, and prosperity for future generations.

RCP Vision

To foster a Southern California region that addresses future needs while recognizing the interrelationship between eco-

conomic prosperity, natural resource sustainability, and quality of life. Through measured performance and tangible outcomes, the RCP serves as both an action plan for implementation of short-term strategies and a call to action for strategic, long-term initiatives that are guided by the following Guiding Principles for sustaining a livable region.

RCP Guiding Principles

Improve mobility for all residents. Improve the efficiency of the transportation system by strategically adding new travel choices to enhance system connectivity in concert with land use decisions and environmental objectives.

Foster livability in all communities. Foster safe, healthy, walkable communities with diverse services, strong civic participation, affordable housing and equal distribution of environmental benefits.

Enable prosperity for all people. Promote economic vitality and new economies by providing housing, education, and job training opportunities for all people.

Promote sustainability for future generations. Promote a region where quality of life and economic prosperity for future generations are supported by the sustainable use of natural resources.

The RCP looks at nine key areas of public policy that are linked closely to these guiding principles (list nine chapters in sidebar). Each chapter is organized into three sections:

- **Goals.** Each goal will help define how sustainability is defined for that resource area.
- **Outcomes.** These focus on quantitative targets that define progress toward meeting the RCP's Goals. Where possible, they are clearly defined (e.g., a 20% reduction in greenhouse gas emissions from 2007 levels), capable of being monitored with existing or reasonably foreseeable resources, and have a strong link to sustainability goals.
- **Action Plan.** This critical part of the RCP lays out a comprehensive implementation strategies that recommends how the region can systematically move to meet the RCP's quantitative Outcomes and achieve its Goals, Guiding Principles, and Vision. Each Action Plan contains:

Constrained Policies. This includes a series of recommended near-term, feasible policies that stakeholders should consider for implementation. For example, the RCP will call on SCAG to adopt certain policies that reflect its role as a planning agency, council of governments, and metropolitan planning organization.

The RCP also recommends potential policies for consideration by local governments and other key stakeholders. Clear policies will improve the Intergovernmental Review (IGR) process and help SCAG and local governments assess the consistency of local projects to the RCP. SCAG uses the IGR process to offer comments to



FAST FACTS

The Consequences of Inaction

► Open Space and Habitat

■ Invasive plants and weeds compete with native plants, potentially wiping out a number of endangered species.

► ■ 60 to 80 percent of existing plant populations could be "phased out" resulting in less biodiversity.

► Economy

► ■ Transportation, agricultural and industrial systems depend on inexpensive oil; decline in petroleum production without alternative energy sources will result in severe price increases and impacts to our economy.

■ Global warming will reduce the quality and quantity of certain agricultural productions, a key driver of the California economy.

local governments on how regional issues and concerns should be addressed by both local projects and citywide policies.

Strategic Initiatives. This encompasses longer-term strategies that require significant effort to implement but are necessary to achieve the RCP's desired Goals and Outcomes. For example, identifying technological breakthroughs that can reduce air pollution from the transportation sector requires both commitment and time. Most of these initiatives are not constrained and will require political will, enabling legislation, new funding sources, and other key developments to become a reality. In most cases, this tier of strategies is the key to achieving the region's sustainability Goals and Outcomes.

The RCP identifies policies that represent best currently available practices or address needed reform for each resource area. However, public agencies and local stakeholders must find ways to evaluate and prioritize the best options in resource-constrained environments where funding is limited.

SETTING PRIORITIES

Because there is no single approach that can solve our region's array of challenges, our region is faced with many policy options that should be evaluated before decisions are made. There are a variety of performance measures that can be used

to rank policy options, such as cost-effectiveness, cost-benefit ratio, and environmental benefits.

The RCP looks at the body of recommended policies and highlights those that can produce the most benefits across resource areas. In doing so, the RCP provides a framework for local decision-making that helps advance those policies that "provide multiple benefits for the price of one." The RCP's priority policies are based on the following qualitative criteria:

- Potential for direct and indirect benefits over multiple resource areas.
- Potential to address other policy objectives, including public health and climate change concerns.

ROLES AND RESPONSIBILITIES

As an advisory document, the RCP identifies potential policies that the public and private sector should consider in its planning and daily operations. The RCP reaffirms the institutional roles that SCAG, local governments, resource organizations, and the private sector have in resource planning and program. To that end, the RCP recommends the following roles and responsibilities for key stakeholders:

- **SCAG.** As a council of governments, SCAG can take a leadership role by working with its member jurisdictions to promote sound planning policies through guidance, financial incentives, and other means. The RCP con-

tinues an ongoing dialogue with 187 local governments to develop consensus about how Southern California thinks globally and regionally and acts locally. In its role as a metropolitan planning organization, SCAG can also help advance integrated policies through its funding decisions.

- **Local governments.** Local jurisdictions have the land use authority to promote balanced growth and other local initiatives that promote holistic planning. In their capacity as major employers, cities also can set an example in their communities by adopting proactive policies that reduce waste, promote energy efficiency, and address other goals.
- **Transportation commissions.** With their role in planning and programming transportation projects, commissions can modify their criteria to help promote integrated planning objectives. For example, linking local land use decisions with transportation funding priorities is a key opportunity to increase transit ridership. Commissions can also look at other environmental and economic criteria to provide a more balanced view of the benefits of their plans, programs, and projects.
- **Resource agencies and conservation groups.** These organizations work every day to promote better resource management, economic development, and other social and environmental policies and programs. The RCP offers these organizations the opportunity to discuss

challenges and opportunities through a more regional approach.

- **Private sector.** Through voluntary changes in their practices, businesses can take a proactive role in addressing the goals of the region. Whether it's reducing consumer waste associated with product packaging or promoting greener building practices in new development, the private sector has a key role in promoting programs that are consistent with the RCP.
- **The public.** The long-term well-being of our region ultimately serves the needs of all of us, our children, and future generations. Our decision-makers need to know that solving our environmental, economic, and quality of life problems is something worth working for. The public can play a key role in addressing the goals of the region through their votes and consumer habits.

RELATIONSHIP OF RCP TO COMPASS BLUEPRINT AND THE REGIONAL TRANSPORTATION PLAN

This integrated Plan is closely tied to both SCAG's Compass Blueprint and the Regional Transportation Plan. On one hand, the RCP complements the Compass Blueprint and the 2008 RTP. For example, it expands on federal SAFETEA-LU requirements that call for improved coordination and mitigation of transportation plans that reinforce mitigation measures

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FAST FACTS

The Consequences of Inaction

▶ Water

■ Increased temperatures would result in earlier annual snowmelt and increased rainfall in the mountains, leading to increased flood risks along major streams and rivers throughout the region.

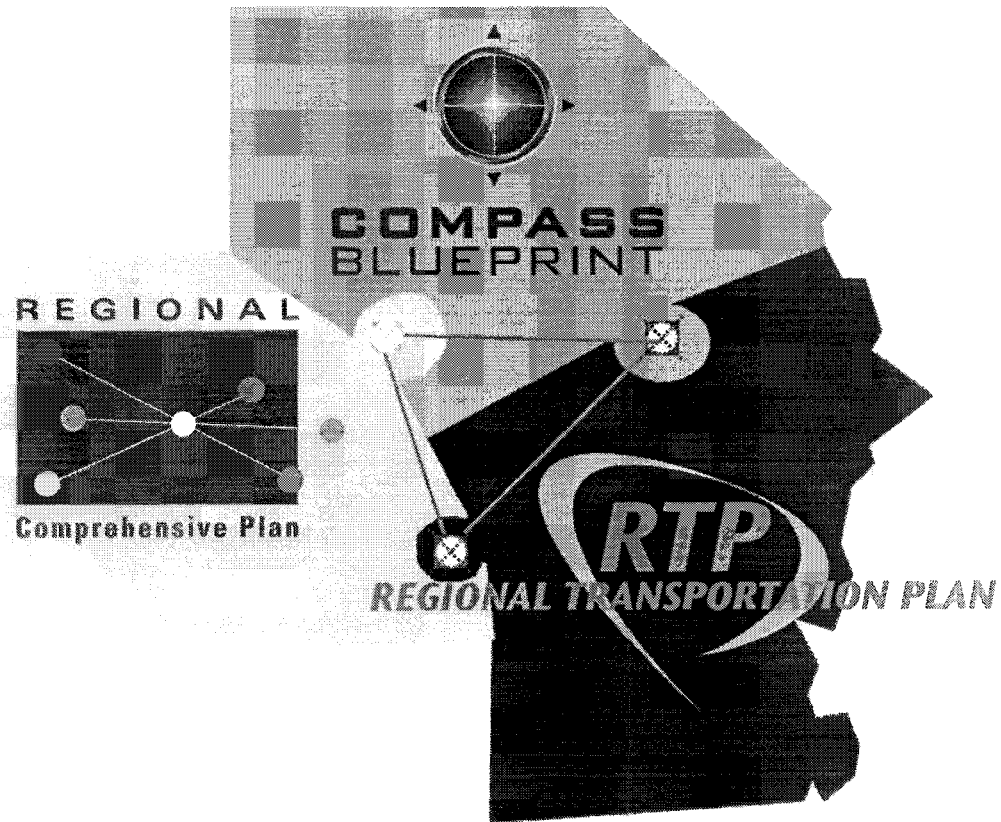
▶ ■ Sierra Nevada spring snowpack could reduce by as much as 90 percent—a primary source of water for Southern California.

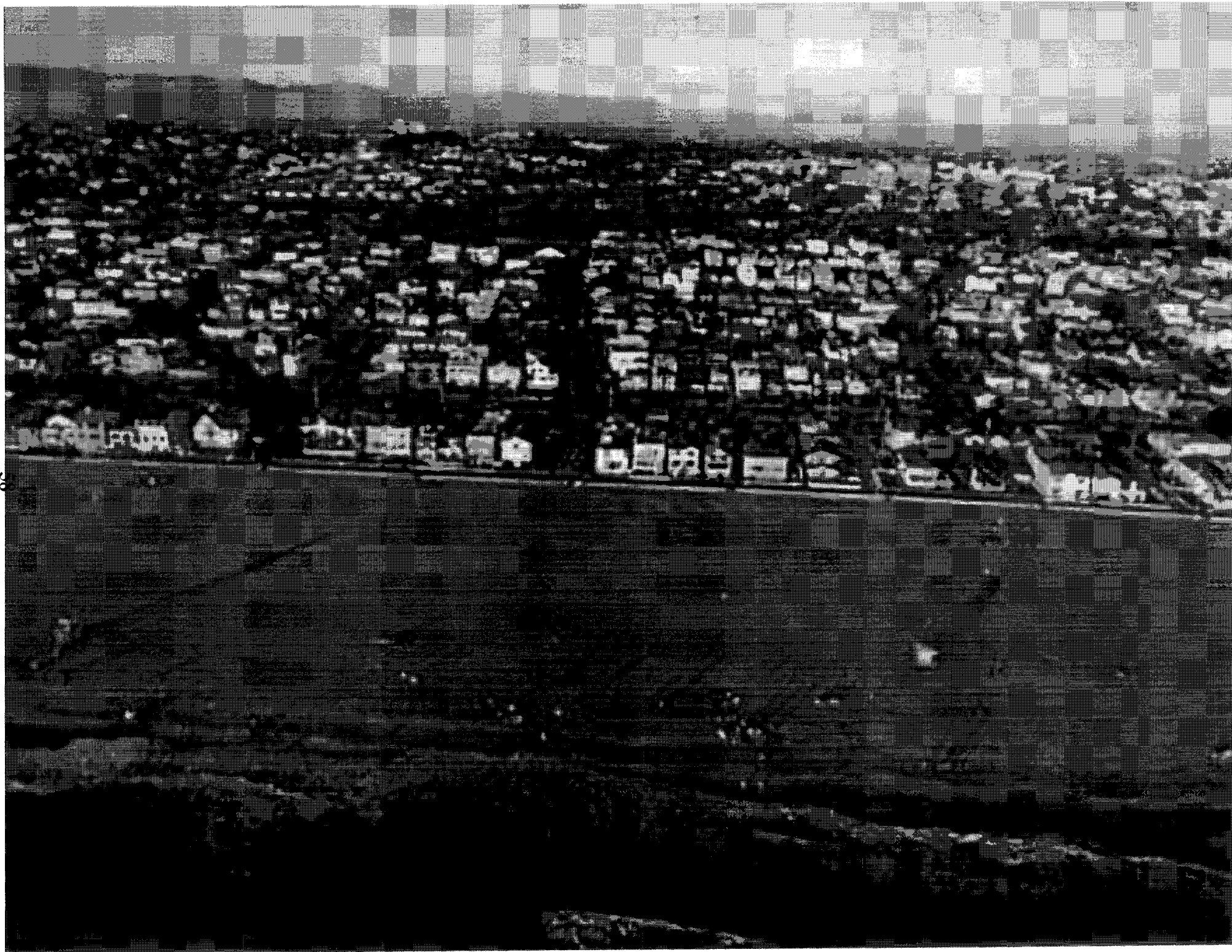
■ Sea level could rise from 1 to 3 feet by 2100 affecting water supply. The influx of saltwater would threaten the quality and reliability of major fresh water supplies.

needed to address the RTP's environmental impacts. However, the RCP further advocates for even bolder policies that attempt to achieve a healthier, more sustainable region.

On the other hand, the RCP sets the direction for how both programs can evolve in the future. For example, while the RCP builds off the growth management framework of the Compass Blueprint, it promotes natural resource policies that help "green" the region as we move toward more sustainable development. It also calls for improved integration of the Compass Blueprint into the RTP by suggesting that future transportation plans better promote transit projects that can serve the Compass Blueprint focus areas that have or are anticipated to see population and job growth. Similarly, the RCP incorporates the recommendations from the pending 2008 RTP and also clarifies the need for further action in the future to achieve this Plan's goals.

FIGURE 1.1
Three Interrelated Plans





Land Use and Housing

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THE CHALLENGE

The region's challenges related to traffic congestion, air quality, housing availability and affordability and nearly all of the other issues identified in this Plan can be traced, at least in part, to the intersection of land use decisions, transportation planning and the growth of our population and economy. In a region where outward expansion has been the norm, there is now a perception that we are "built out," with little available land left to accommodate growth. Complaints that new development is overburdening transportation infrastructure are becoming commonplace as traffic congestion and delay worsen. Commutes in many parts of the region are long and getting longer - indicative of a jobs-housing imbalance as people live far from where they work.

California's system of municipal finance has forced local governments to make land use decisions based on revenue-generation concerns rather than sound planning practice. Housing costs have skyrocketed as the supply of housing has failed to keep pace with a growing demand (see Figure 2.1).

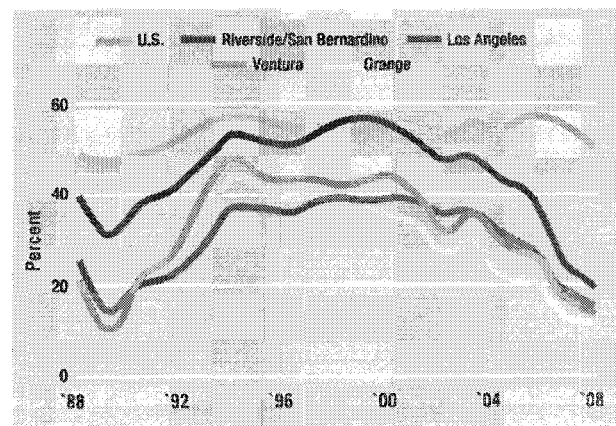
Linking Land Use and Transportation Planning

The quality of life in any region depends in large part on travel - how easy it is to get from home to work and back, the amount of time spent commuting, and the types and degree of choices available for getting around. Closely related to that

are the choices we make about how land should be used. The types and appearances of buildings, how they function in a neighborhood or business district, and where they are located all have an effect on transportation use. For example, a small neighborhood that combines a shopping area with nearby residences makes it easier for people to walk for some of their trips (see Figure 2.2). Highway-adjacent commercial development, however, tends to require auto travel for all trips.

FIGURE 2.1

Figure Title



At the same time, decisions made about transportation also affect what we build and where we build it. Freeway interchanges usually encourage development of auto-oriented stores

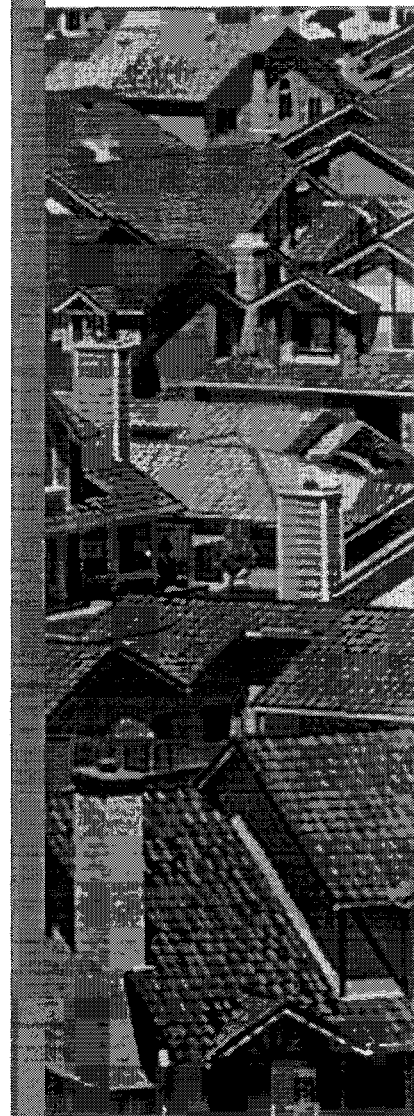


FIGURE 2.2
Figure Title



Source

and services, while transit and pedestrian amenities stimulate “Main Street” business and residential development nearby.

We are still growing – the region is expected to add another six million residents between 2005 and 2035. The new arrivals are members of our own growing families and those attracted by the strong regional economy and we can expect this growth regardless of the land use decisions we make. However, by linking responsible land use and transportation planning, we can accommodate growth while maintaining the region’s mobility, livability, prosperity and sustainability.

THE PLAN

Sustainably planning for land use and housing in Southern California will maximize the efficiency of the existing and planned transportation network, provide the necessary amount and mix of housing for our growing population, enable a diverse and growing economy and protect important natural resources.

We can achieve land use and housing sustainability by implementing the Compass Blueprint planning principles developed corroboratively by SCAG and other partners since 2000. Implementing Compass Blueprint will result in significant land use changes to only 2 percent of the total land area in the region. Implementation efforts, by all levels of government and all stakeholders, are part of what is referred to as the “2% Strategy.”

SCAG's transportation modeling and other analyses show that implementing the Compass Blueprint scenario will:

- Provide adequate and affordable housing for our growing population. Production of new housing units will provide an economic stimulus to the region through direct investment and new jobs.
- Promote improved jobs-housing balance throughout the region. Locating new housing near jobs, new employment centers near housing, and both housing and jobs near transit and other transportation corridors will shorten commutes and allow commuting options other than single occupancy vehicles.
- Reduce regional Vehicle Miles Traveled (VMT), resulting in reduced traffic congestion and delay and reduced air quality impacts. Reduced VMT will also lead to significant infrastructure cost savings.
- Improve social equity and environmental justice through revitalization of older suburban and inner-city locations, promotion of economic development in urban core areas and enhancement of local property and sales tax revenues.

Development of the Compass Blueprint

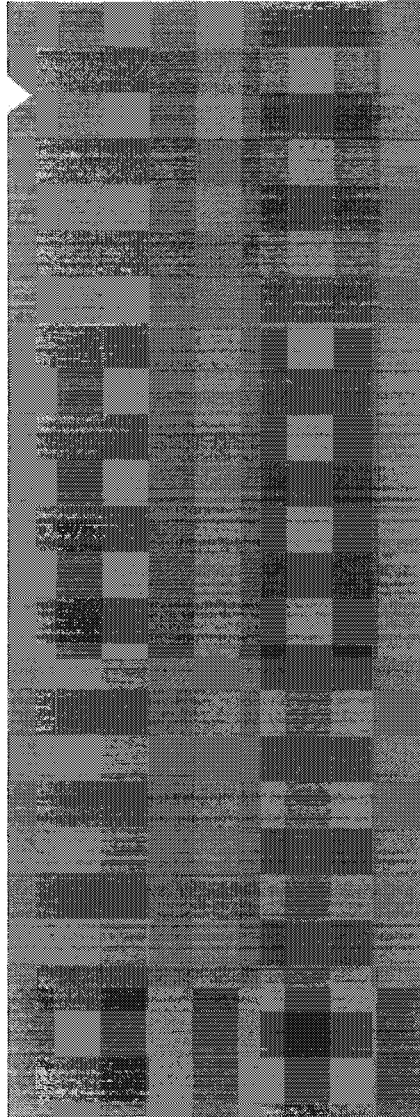
The Compass Blueprint growth vision, 2% Strategy and the Goals, Outcomes and Action Plan outlined in this chapter

are the products of a proactive and integrated process that began in 2000 with direction from SCAG's Regional Council and a region-wide series of workshops involving over 1500 stakeholders. SCAG's quantitative modeling and policy analysis techniques then determined some of the objective land use, transportation and economic implications of a range of alternative growth scenarios. By 2004, a regional consensus emerged on a growth vision/land use scenario that will enhance Southern California's livability, mobility, sustainability and prosperity.

The Compass Blueprint growth vision formed the basis for the preferred land use alternative in the 2004 Regional Transportation Plan. Continued technical analysis and a 2006 series of stakeholder workshops at which over 90 percent of the region's jurisdictions were represented, have resulted in an updated growth vision and a significantly refined scenario. This became the preferred land use alternative for the 2008 Regional Transportation Plan and the foundation of the Land Use and Housing chapter of this Regional Comprehensive Plan.

Ultimately, the region should work together toward the outcome of realizing, by 2035, development and redevelopment consistent with the Compass Blueprint growth vision and the Plan Alternative growth scenario developed for the 2008 Regional Transportation Plan through SCAG's Integrated Forecast program. The Compass Blueprint scenario describes a potential future for the region and distributes forecast





growth in population and employment throughout the region. A palette of future development and redevelopment types ("city neighborhood" or "town center," for example), each with an associated density of households and jobs per acre, are mapped to specific locations, creating a scenario that can realistically accommodate the region's total forecast growth while maintaining or enhancing the region's mobility, livability, prosperity and sustainability.

The details of the scenario, including maps showing the locations of the growth and tables describing the housing and employment densities and other attributes of the different development types, are presented in the 2008 Regional Transportation Plan.

To accurately track implementation progress and assess consistency with the Compass Blueprint, SCAG will develop a monitoring plan and assessment methodology, as described below in the chapter's Action Plan.

LAND USE AND HOUSING GOALS

Successfully integrate land and transportation planning and achieve land use and housing sustainability by implementing Compass Blueprint and 2% Strategy:

- Focusing growth in existing and emerging centers and along major transportation corridors.

- Creating significant areas of mixed-use development and walkable, "people-scaled" communities.
- Providing new housing opportunities, with building types and locations that respond to the region's changing demographics.
- Targeting growth in housing, employment and commercial development within walking distance of existing and planned transit stations.
- Injecting new life into under-used areas by creating vibrant new business districts, redeveloping old buildings and building new businesses and housing on vacant lots.
- Preserving existing, stable, single-family neighborhoods.
- Protecting important open space, environmentally sensitive areas and agricultural lands from development.

LAND USE AND HOUSING OUTCOMES

- One hundred percent of City and County General Plans consistent with Compass Blueprint by 2012. (General Plans are the local blueprints for growth and the best indicator of local governments' having adopted Compass Blueprint planning principles.)
- Significantly increase the number and percentage of new housing units and jobs created within the Compass 2%

Strategy Opportunity Areas should be by 2012 and improve the regional jobs-housing balance. (Tracking the number of new units will measure the region's progress in accommodating forecast growth. Percentage of housing and jobs developed within the Opportunity Areas will indicate the locational efficiency of growth.)

- Reduce total regional vehicle miles traveled (VMT) from carbon-based fueled vehicles to 1990 levels by 2020. (The Land Use and Housing Action Plan can be expected to result in a 10 percent reduction in VMT in the year 2035 when compared to current trends. VMT serves as a proxy for jobs/housing balance, urban design, transit accessibility, and other urban form issues. VMT per household will decrease with Compass Blueprint implementation.)
- Add one new housing unit to stock for every 3 persons in population growth and one new housing unit for every 1.5 jobs. (Housing supply measures the availability of housing in comparison to population and jobs.)
- Reduce by 20 percent the percentage of households paying more than 50 percent of their income for combined housing and transportation costs from the year 2000 level. (Combined housing and transportation costs as a percentage of income is an important measure of housing affordability and efficient development.)
- Increase the region's first-time homebuyer affordability index so that the relationship of minimum qualifying income to entry-level home price mirrors or surpasses the national average. (The first-time homebuyer affordability index is another key measure of housing affordability.)
- Increase regional homeownership so that the percentage of households owning their own home mirrors or surpasses the national average. Reduce the existing disparities in homeownership by ethnic group by 50 percent. (The region currently suffers from low homeownership rates, especially among certain ethnic groups.)
- Achieve a regional housing vacancy rate of 1.5 percent for owner-occupied units and 5 percent for rental units. (These vacancy rates are indicators of a healthy housing market.)
- Significantly improve the efficiency of land use in the region's urbanized areas by 2035 (This measures the number of people and jobs per acre and the region's ability to accommodate growth in parts of the region that are already urbanized or that become urbanized during the planning period.)
- Significantly decrease the rate of land consumed for urbanization between 2007 and 2035. (Land consumption and urbanization measures the rate at which undeveloped land is converted to urban uses, relative to population growth.)



- All cities in the region adopt green building standards by 2012. (Green Building standards as part of local planning and permitting represents a key element of the Compass Blueprint Growth Vision—sustainability. Green Building will also be a key to achieving the sustainability goals identified in the Water, Solid Waste, Energy and Air Quality chapters of this RCP.)

LAND USE AND HOUSING ACTION PLAN

Best Practices	Legislation	Coordination	Constrained Policies	Potential for Direct/Indirect Benefits										Other Benefits	
				Land Use	Transportation	Air Quality	Water	Energy	Open Space	Economy	Security	Solid Waste	Public Health	Climate Change	
SCAG Policies (SCAG policies shall be subject to consideration for future Overall Work Plans)															
			LUH-1. SCAG shall provide technical assistance and regional leadership to implement the Compass Blueprint growth scenario and integrate growth and land use planning with the existing and planned transportation network.	X	X	X		X	X	X			X	X	
			LUH-1.1 SCAG shall provide planning services to local governments through Compass Blueprint Demonstration Projects. These projects will help local jurisdictions: <ul style="list-style-type: none">• Update General Plans to reflect Compass Blueprint principles and integrate land use and transportation planning.• Develop specific plans, zoning overlays and other planning tools to enable and stimulate desired land-use changes within 2% Strategy Opportunity Areas.• Complete the economic analyses and community involvement efforts that will ensure that the planned changes are market-feasible and responsive to stakeholder concerns.• Visualize potential changes, through innovative graphics and mapping technology, to inform the dialogue about growth, development and transportation at the local and regional level	X	X	X		X	X	X			X	X	
		X	LUH-1.2 SCAG shall continue with a targeted public relations strategy that emphasizes regional leadership, the benefits and implications of Compass Blueprint, and builds a sense of common interests among Southern Californians.	X	X	X		X	X	X			X	X	
		X	LUH-1.3 SCAG shall expand the role of the Compass Partnership, a forum convening representatives from government, civic leaders and members of the development community. The Compass Partnership will advise the region on how public-private partnerships will help leverage the outcomes outlined in this chapter. SCAG shall encourage cooperative land-use decision-making and planning efforts between neighboring jurisdictions.	X	X	X		X	X	X			X	X	
			LUH-2. SCAG shall encourage leveraging federal and State and local funds to implement the Compass Blueprint.	X	X			X	X	X			X	X	
			LUH-2.1 All stakeholders should leverage state infrastructure bond financing, including the Department of Housing and Community Development's Transit Oriented Development program and should support legislation that will target infrastructure bond funds for regions with adopted growth visions such as the Compass Blueprint and for projects consistent with these visions.	X	X			X	X	X			X	X	
			LUH-3 SCAG shall develop an objective monitoring system to gather data and measure regional progress toward implementing the Compass Blueprint growth scenario and achieving the outcomes outlined in this chapter.	X	X	X		X	X	X			X	X	
			LUH-3.1 SCAG shall define a methodology for assessing local General Plans' consistency with Compass Blueprint.	X	X	X		X	X	X			X	X	
			LUH-3.2 SCAG shall develop a data set and methodology for determining what portion of regional growth is occurring within 2% Strategy Opportunity Areas.	X	X	X		X	X	X			X	X	

IGR/Best Practices	Legislation	Certification	Constrained Policies	Potential for Direct/Indirect Benefits								Other Benefits		
				Land Use	Transportation	Air Quality	Water	Energy	Open Space	Economic	Security	Solid Waste	Public Health	Climate Change
			LUH-3.3 SCAG shall further develop land use performance measures to be included in future Regional Transportation Plans.	X	X	X		X	X	X			X	X
			LUH-4 SCAG shall use its Intergovernmental Review process (IGR) role to provide robust review and comment on large development projects regarding their consistency with the Compass Blueprint.	X	X	X		X	X	X			X	X
Local Government Policies														
X			LUH-5 Local governments should provide for new housing, consistent with state Housing Element law, to accommodate their share of forecast regional growth.	X						X				
X			LUH-5.1 Local governments should adopt and implement General Plan Housing Elements that accommodate the housing need identified through the Regional Housing Needs Assessment (RHNA) process. Affordable housing should be provided consistent with the RHNA income category distribution adopted for each jurisdiction. To provide this housing, especially affordable housing, jurisdictions should leverage existing state programs such as HCD's Workforce Incentive Program and the state density bonus law and create local incentives such as housing trust funds, inclusionary zoning, tax-increment-financing districts in redevelopment areas and around transit villages and partnerships with non-governmental stakeholders.	X	X	X		X	X	X				X
X			LUH-6 Local governments should leverage federal and State and local funds to implement the Compass Blueprint.	X	X	X		X	X	X			X	X
X			LUH-6.1 All stakeholders should leverage state infrastructure bond financing, including the Department of Housing and Community Development's Transit Oriented Development program and should support legislation that will target infrastructure bond funds for regions with adopted growth visions such as the Compass Blueprint and for projects consistent with these visions.	X	X	X		X	X	X			X	X
X			LUH-6.2 Subregional organizations should leverage the federal transportation planning funds available at the subregional level, to complete projects that integrate land use and transportation planning and implement Compass Blueprint principles.	X	X	X		X	X	X			X	X
X			LUH-7 Local governments should consider shared regional priorities, as outlined in the Compass Blueprint, Regional Transportation Plan, and this Regional Comprehensive Plan, in determining their own development goals and drafting local plans.	X	X	X	X	X	X	X	X	X	X	X
X			LUH-7.1 Local governments should take a comprehensive approach to updating their General Plans, keeping General Plans up-to-date and providing progress reports on General Plan updates and implementation, as required by law. Communities are required to submit the General Plan and General Plan elements to SCAG under the Intergovernmental Review Program pursuant to Federal Executive Order No. 12372 and CEQA Section 15206.	X	X	X	X	X	X	X	X	X	X	X
X			LUH-7.2 Developers and local governments should integrate green building measures into project design and zoning such as those identified in the U.S. Green Building Council's Leadership in Energy and Environmental Design, Energy Star Homes, Green Point Rated Homes, and the California Green Builder Program.	X		X	X	X		X		X	X	X

R/R Best Practices	Legislation	Coordination	Constrained Policies	Potential for Direct/Indirect Benefits										Other Benefits	
				Land Use	Transportation	Air Quality	Water	Energy	Open Space	Economy	Security	Solid Waste	Public Health	Climate Change	
X			LUH-7.3 Local governments and subregional organizations should develop ordinances and other programs, particularly in the older, more urbanized parts of the region, which will enable and assist in the cleanup and redevelopment of brownfield sites.	X	X	X		X	X	X		X	X	X	
X			LUH-7.4 Local governments and subregional organizations should develop adaptive reuse ordinances and other programs that will enable the conversion of vacant or aging commercial, office, and some industrial properties to housing and mixed use with housing.	X	X	X		X	X	X		X	X	X	
Federal and State Government Policies															
	X		LUH-8 The state should continue to support and provide funding for the statewide Blueprint Planning program.	X	X	X	X	X	X	X	X	X	X	X	

LAND USE AND HOUSING

Initiative	Legislation	Coordination	Strategic Initiatives	Potential for Direct/Indirect Benefits										Other Benefits	
				Land Use	Transportation	Air Quality	Water	Energy	Open Space	Economy	Security	Solid Waste	Public Health	Climate Change	
SCAG Initiatives (SCAG initiatives shall be subject to consideration for future Overall Work Plans)															
	X	X	LUHSI-1 SCAG and county transportation commissions should initiate a program to secure significant resources for implementing Compass Blueprint. The program would provide infrastructure funding for specific allowable costs of development projects that integrate land use and transportation planning and are consistent with the 2% Strategy.	X	X	X		X	X	X		X	X	X	
	X	X	LUHSI-2 SCAG shall continue efforts, in collaboration with state agencies and local jurisdictions, to significantly reform state Housing Element law and the Regional Housing Needs Assessment process. These reforms should promote the broad goals stated by the Secretary of Business, Transportation and Housing and shared by SCAG: <ul style="list-style-type: none">• Each municipality has a clear responsibility to provide housing based on the growth in population and jobs generated in the community.• Jurisdictions should be able to collaborate in meeting housing needs.• Planning for housing should be pursued over a longer time frame in line with other major growth planning efforts.	X						X					
Federal and State Government Initiatives															
	X	X	LUHSI-3 The State, in collaboration with SCAG, other regional organizations and local jurisdictions, should work to re-structure and re-incentivize the municipal finance system that currently challenges virtually all local governments in California and often promotes inefficient land uses. Changes should: <ul style="list-style-type: none">• Ensure the reliability of revenue streams to local government such that local finances are not the first resort in difficult budget years.• Re-structure sources of municipal revenue to place less emphasis on retail development and sales tax receipts, and to incentivize housing development and other land use changes consistent with regionally shared goals.	X						X		X			

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REGIONAL COMPREHENSIVE PLAN



Open Space and Habitat

THE CHALLENGE

As the SCAG region rapidly urbanizes open space resources that enhance quality of life and provide environmental benefit are disappearing. In areas where development abuts natural lands or agricultural lands, these resources are often lost to make room for new development or to accommodate services for existing development. Many cores (large blocks of habitats) and linkages are unprotected. In urbanized areas, open space resources such as parks, trails and greenbelts are often scarce.

Currently, our region is experiencing unprecedented development and our open spaces will suffer the consequences of inaction. Already, in the most urbanized areas of the region, there is more developed land than natural lands, parks, and farmland combined. Although, there is a seeming abundance of private vacant lands and even farmlands in the slowly urbanizing and rural areas, the actions taken in urbanized areas have already impacted open space throughout the region:

- The extirpation of species in one part of the region leads to federal and/or state listings affecting areas where these species still occur. The loss and degradation of special habitats (wetlands, riparian, sage scrub, and native

grasslands) from past development leads to region-wide regulations.

- Development, past and present, continues to affect water quality and watershed conditions throughout the region.
- Our transportation system created many of the development patterns that exist today. This system crosses almost all large tracts of open space outside of urban areas, impeding wildlife movement and leads to wildlife loss as road kill. In areas where development has also occurred, wildlife linkages have been narrowed or severed. Based on a statewide assessment, there are at least 72 linkages at risk of being severed by existing and projected development.
- Agricultural lands exceeded developed lands in the existing urban core and in outlying areas until relatively recently. Both the rate and amount of conversions to non-farm uses continues to increase. For the first time in its history, it appears the region may have more developed lands than agricultural lands.

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REGIONAL COMPREHENSIVE PLAN



OPEN SPACE RESOURCES

Natural Lands: Undeveloped vacant land with natural vegetation, including lands used for grazing, lands with wildlife habitat.

Cores: blocks of natural lands that are greater than 1,000 acres and have minimal edge to area ratio.

Fragments: patches of habitat smaller than 1,000 acres located within or farther than one mile from a core.

Community Open Space: Public open space in or serving communities, such as park and recreation areas, community gardens, dedicated open space, urban forests, greenbelts, and trail systems.

Farmland: Prime farmland, farmland of statewide importance, unique farmland, and farmland of local importance.

Three categories of open space are addressed in this chapter, all of which have common attributes such as aesthetic, air quality, and water quality benefits. Each also offers unique benefits:

- **Natural Lands:** These are generally undeveloped and/or vacant lands with some natural vegetation and/or wildlife value, including lands used for grazing. These lands may include large and small blocks of habitat and the open space that links those blocks together. This includes habitat that has some level of existing protection (protected open space) or needs to be protected to preserve the ecological function and value of protected open space, especially areas that serve as wildlife linkages and areas with sensitive habitats not covered by existing conservation programs;
- **Community Open Space:** This includes areas that enhance the quality of life in urban areas and completes interconnected networks of parks, trails, greenbelts, community gardens, and urban forests serving the region's communities; and
- **Farmlands:** This category includes prime farmland, farmland of statewide importance, unique farmland and farmland of local importance as defined by the California Department of Conservation. They provide food, products and economic benefits to the region and include the region's remaining prime and other important agricultural lands, especially farmlands intertwined with unprotected natural lands and developing communities.

There are numerous plans and programs throughout Southern California that attempt to conserve open space resources. Examples include:

- An open space element in a city or county general plan
- Natural community conservation plan (NCCP) and habitat conservation plan (HCP)
- Mandated management plans for public lands, such as the Southern California Forest Plan and California Desert Conservation Area Plan
- Integrated watershed management plans
- Open space acquisition and habitat enhancement programs implemented by the California Resource Agency, Conservancies, non-profit organizations and trusts
- Resource specific conservation strategies, such as South Coast Missing Linkages
- Open space and parkland acquisition programs implemented by public-private partnerships and individual conservancies
- Open space planning strategies and initiatives such as Green Visions

While these plans address open space issues, they do not individually fulfill the need for a more holistic regional approach, one which evaluates the collective needs of the six-county

SCAG region. SCAG's approach is to create a cohesive vision and a comprehensive open space strategy by tying together these plans and identifying additional opportunities for conservation.

THE PLAN

The overall focus of this chapter is to plan and provide for the conservation of the region's open space resources focusing on

- Interconnections among resources
- Future land use decisions that will either strengthen or impair the region's ability to sustain the resources, and
- Opportunities for inter-jurisdictional planning

The intent is to conserve the region's open space resources in a way that will ensure sustainability over time. To help guide this effort, open space resources have been grouped into three categories: natural lands, community open space and farmlands and rangelands.

SCAG's role will be to:

- Maintain the regional open space database and use it to track progress in attaining regional open space conservation goals;
- Integrate the policies and actions herein into its existing transportation planning, growth forecasting, intergov-

ernmental review, and legislative programs, and expand its capacity to provide technical services for open space planning;

- Establish a regional forum for coordinating existing programs and initiating new cooperative efforts that emphasize opportunities for cross-county and cross-jurisdictional open space protection; and
- Work in cooperation with its member agencies and open space conservancies in the region to find ways to supplement existing funding sources for open space conservation.
- Include open space mitigation policies and/or mitigation recommendations in the RTP;
- Link funding for planning and/or transportation projects to comply with SCAG's open space program
- Use the inter-governmental review process to address the open space impacts of regionally significant projects;
- Be a regional clearinghouse for data, funding information, program coordination; and
- Propose legislative solutions.

SCAG's member agencies will be asked to:

- Propose and participate in cooperative conservation planning efforts;



OPEN SPACE AND WATER

The availability of open space in the region directly impacts the quality of our water. As a direct result of the loss of open spaces in the region due to increased urbanization (and as a result increased impervious surfaces), the natural water cycle in which most of the water soaks into the ground during and after storm events, has been replaced by a paved drainage system.

As a consequence less water enters groundwater aquifers to become the supply for drinking water wells, increased runoff threatens floods and carries trash and pollutants to the ocean, and we live in an environment that is increasingly more asphalt-black and concrete-gray than green.

- Adopt the regional open space policies presented in the program and apply those policies in planning and reviewing projects
- Provide updated information on local open space resources for inclusion in the regional open space database

Local conservancies and other interested parties will be invited to:

- Propose and participate in cooperative efforts with SCAG member agencies
- Provide updated information on local open space resources for inclusion in the regional open space database.

The goals and outcomes included in this chapter focus on the conservation of regionally significant open space resources. To that end, SCAG completed a comprehensive evaluation of open space resources in the region and its neighboring counties. Geographic Information System (GIS) data were collected from existing sources to assist with and inform the evaluation of open space planning issues. These data were evaluated and analyzed to show the distribution of existing open space resources, levels of existing and planning protection and areas of key habitat linkages. Where available, the SCAG data collected and presented as part of this effort was for the entire region, and includes Kern and San Diego Counties.

NATURAL LANDS

The sustainability of natural lands is directly related to maintaining large blocks of habitat (also called "cores"), keeping them relatively impervious to outside disturbance and allowing wildlife linkages to function. This network of large cores and wildlife linkages are part of an ecosystem where plants and animals occur in populations large enough that natural ecological processes (predation, competitive interaction, natural disturbance and recovery) operate so that evolution is sustained. This vast connected landscape provides a sense of place and spiritual renewal that cannot be provided elsewhere. This network recharges the region's watershed and water resources by maintaining previous surfaces necessary for groundwater recharge while combating the effects of air pollution and global warming.

Except for northern Ventura County, all natural lands in the SCAG region occur within three of the nine bioregions in Southern California: South Coast, Mojave Desert and Colorado Desert. Bioregions are areas that include multiple ecological communities based on common physical (climate, geology) biological (vegetation, wildlife) and environmental conditions. Northern Ventura County is unique in that it forms the southeast tip of the Central Coast bioregion and is located where five bioregions converge.

Many of the natural lands in the Southern California bioregions are large interconnected cores. However, near developed areas and along the regional highways, connections between large

tracts of natural lands have been narrowed and fragmented and in some places permanently severed. Wildlife movement corridors, or wildlife “linkages,” are an important component of natural lands. Southcoast Wildlands, a nonprofit organization, evaluated and identified 70 linkages in the SCAG region as areas where natural connectivity is at risk.

One way to determine the overall need for a regional planning effort such as the one SCAG has undertaken is to evaluate the current levels of “protection” for lands in the region, particularly natural lands.¹ This helps to provide a regional context for planning by showing the existing pattern of what is protected and what is not, thereby helping to identify those areas where open space resources are most at risk. Concurrent with this mapping effort, existing plans and programs were reviewed to identify which areas are covered by conservation strategies and which are not.

Figure 3.1 shows the distribution of many key open space resources including “protected” and “unprotected” cores, connectors and fragments within the SCAG region and its vicinity. It also shows the location of the protected and unprotected areas in relation to wildlife linkages, linkage design areas, park and recreation areas (from SCAG’s 2005 land use inventory) agricultural lands, and developed lands. Together, these form the region’s open space infrastructure. Linkages, cores and connectors exist intra-county and inter-county; they often cross county lines and from the SCAG region into Kern and San Diego Counties.

By evaluating the open space resources identified in Figure 3.1, SCAG identified those areas with high potential for conservation, particularly areas where cross jurisdictional opportunities exist. Generally, these areas do not fall within the limits of any one jurisdiction, and as such provide an appropriate focus for a regional scale document. Figure 3.2 provides examples of possible conservation opportunity areas; these are areas where mitigation for impacts of regionally significant project and/or conservation efforts by public and private entities should be directed. Although SCAG does not have the authority to purchase or manage lands, conservation of these areas will be achieved through already established programs or through compacts facilitated by SCAG. SCAG should develop Memoranda of Understanding with state and federal resource agencies as necessary to facilitate the conservation of natural lands.

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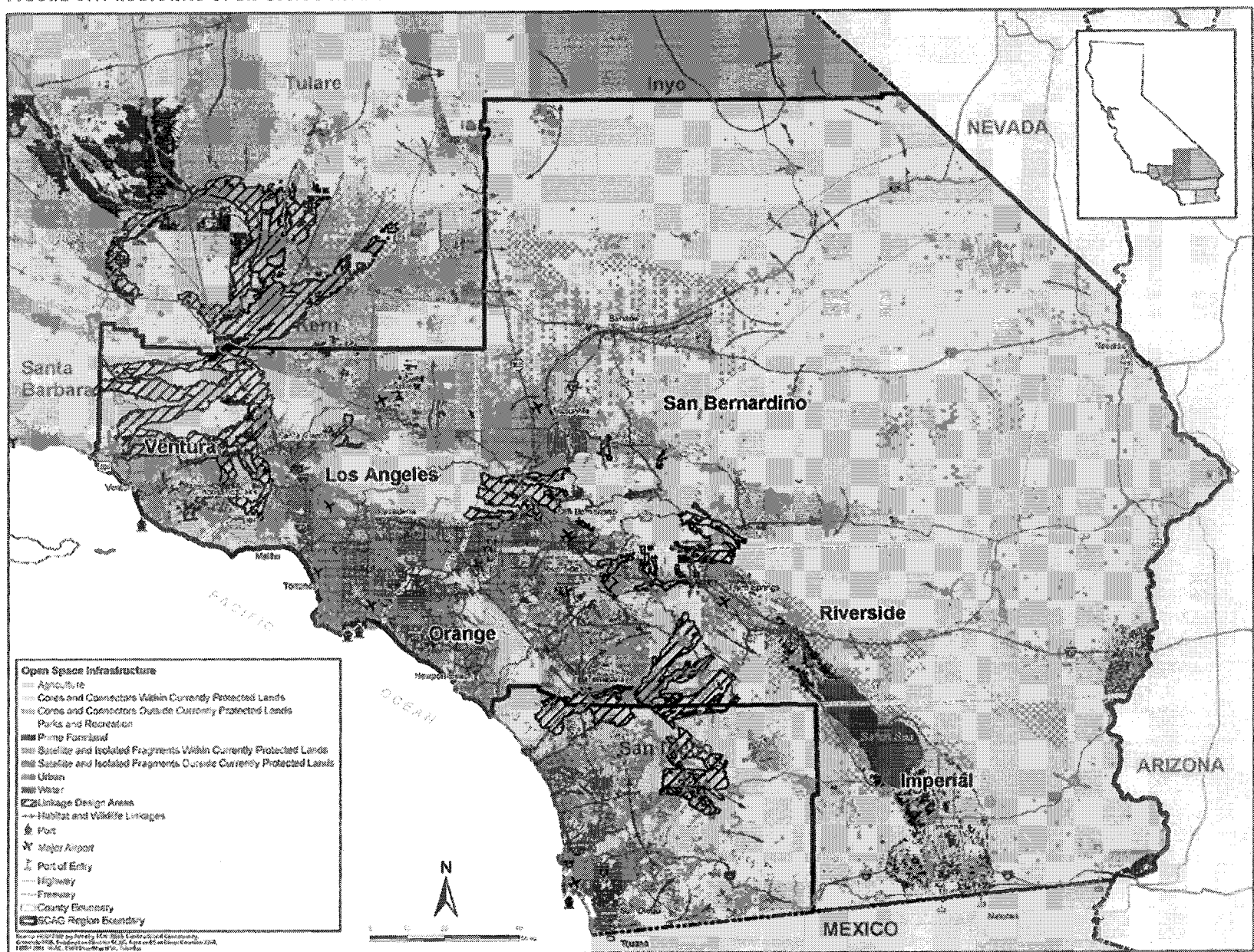
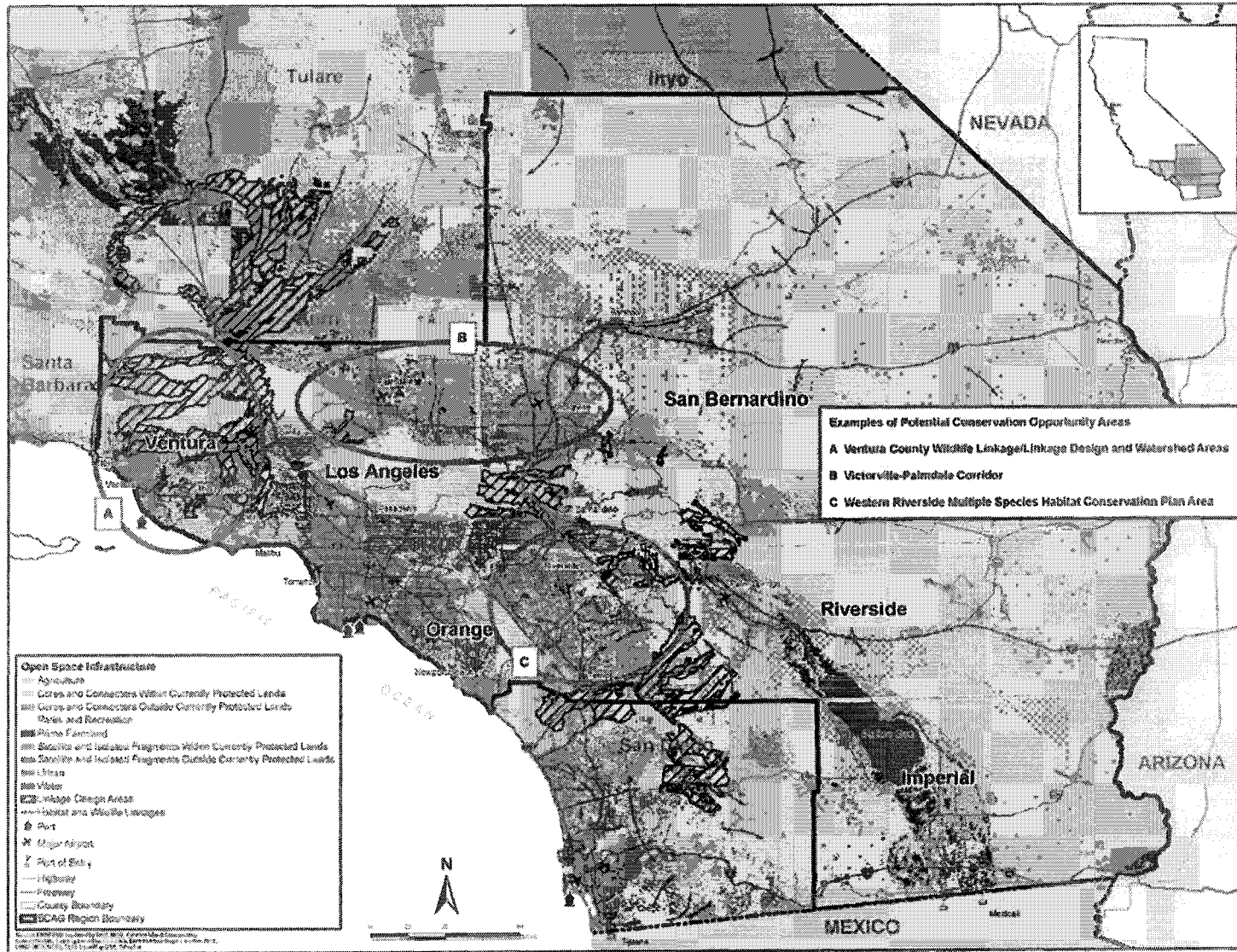


FIGURE 3.2: POTENTIAL CONSERVATION OPPORTUNITY AREAS



OPEN SPACE AND WATER

Open space and park lands have the potential to enhance groundwater resources (by preserving or expanding the area available for natural groundwater recharge), improve surface water quality (to the extent that these open spaces filter, retain, or detain stormwater runoff), and provide opportunities to reuse treated runoff or recycled water for irrigation (thereby reducing the demand for potable water).

The loss of functional native habitat and the alteration of natural channels in urbanized areas (such as the Los Angeles River) have also reduced the extent to which natural processes can remove contaminants in urban and stormwater runoff, cycle nutrients through watersheds, and provide functional habitat for species.

Open Space and Habitat–Natural Lands Goals

- Ensure a sustainable ecology by protecting and enhancing the region's open space infrastructure and mitigate growth and transportation related impacts to natural lands by:
 - Conserving natural lands that are necessary to preserve the ecological function and value of the region's ecosystems;
 - Conserving wildlife linkages as critical components of the region's open space infrastructure;
 - Coordinating transportation and open space to reduce transportation impacts to natural lands

Open Space and Habitat–Natural Lands Outcomes

- By 2035, increase the amount of protected open space in the region by at least 700,000² acres of natural lands that include important core areas,³ wildlife linkages, have special status habitats or species and/or buffer protected natural lands from development. The number of acres protected would be roughly proportionate to the urban footprint of the 2004 Regional Transportation Plan.
- By 2012, put in place approved conservation strategies for all regionally significant wildlife linkages.

OPEN SPACE AND HABITAT--NATURAL LANDS ACTION PLAN

Identify Practices	Legislation	Coordination	Constrained Policies	Potential for Direct/Indirect Benefits										Other Benefits	
				Land Use	Transportation	Air Quality	Water	Energy	Open Space	Economy	Security	Social Justice	Public Health	Climate Change	
SCAG Policies (SCAG policies shall be subject to consideration for future Overall Work Plans)															
			OSN-1 Track and monitor open space conservation efforts in the region. • SCAG shall set up a clearinghouse of important GIS data used for open space planning. SCAG shall maintain and update the regional open space database, track open space conservation and development (e.g. any activity that reduces the biological value of natural lands compared to baseline conditions) in the region and will commit to providing annual updates on conservation efforts.	X	X	X	X	X	X					X	X
X			OSN-2 Use SCAG's Intergovernmental Review (IGR) process to comment on regional projects. • SCAG shall establish criteria for evaluating impacts to regionally significant open space resources, and will recommend mitigation measures for significant impacts to regional resources. These recommendations will be included in SCAG's Regional Open Space Guidance. • Priority review will include 1) existing and proposed General Plans and 2) any individual project that will have a significant impact on natural open space.	X	X	X	X	X	X					X	X
			OSN-3 Develop and implement guidance on mitigation options for open space impacts • SCAG shall develop and implement coordinated mitigation programs for regional projects, with an emphasis on regional transportation projects. • SCAG shall produce and maintain a list/map of potential conservation opportunity areas. These conservation opportunity areas may be used by local governments and project sponsors as priority areas for mitigating impacts to open space resources. (see <i>Regional Open Space Guidance</i> for a complete description of Conservation Opportunity Areas) • SCAG shall work in partnership with state and federal agencies, local conservancies and other groups to conserve natural lands in key locations through existing conservation programs, mitigation for the impacts of regional projects and conservation compacts facilitated by SCAG. • SCAG shall work with County Transportation Commissions and Caltrans to refine the proposed open space consistency guidelines as necessary.	X	X	X	X		X					X	X
			OSN-4 SCAG shall support policies and actions that preserve natural areas, specifically those areas identified in local, state, and federal plans.	X		X	X		X					X	X
			OSN-5 SCAG shall support the protection of vital resources such as wetlands, groundwater recharge areas, woodlands, production lands, and land containing unique and endangered plants and animals.	X		X	X		X					X	
			OSN-6 SCAG shall encourage the implementation of measures aimed at the preservation and protection of recorded and unrecorded cultural resources and archaeological sites	X					X						
X			OSN-7 SCAG shall encourage "watershed management" programs and strategies, recognizing the primary role of local governments in such efforts	X	X	X	X	X	X					X	

OPEN SPACE AND HABITAT

ISD/Best Practices	Legislation	Coordination	Constrained Policies	Potential for Direct/Indirect Benefits										Other Benefits	
				Land Use	Contamination	Air Quality	Water	Energy	Open Space	Economy	Security	Solid Waste	Public Health	Climate Change	
X			OSN-8 SCAG shall support regional efforts to identify and cooperatively plan for wetlands to facilitate both sustaining the amount and quality of wetlands in the region and expediting the process for obtaining wetlands permits.	X			X		X				X		
X			OSN-9 SCAG shall support and work with communities and research entities on developing measures of the economic value of natural lands.	X		X	X		X						
X			OSN-10 Integrate open space assumptions into the Regional Growth Forecast • SCAG shall prepare growth forecasts for the region that are based on assumptions that accurately reflect allowed uses on 1) existing designated open space 2) areas subject to regulations that preclude or limit uses and 3) areas where some or all of the lands are proposed for preservation under approved conservation programs.	X	X		X		X					X	
	X		OSN-11 Seek funding for conservation of natural lands • SCAG shall partner with local agencies and non-profit foundations in situations where a regional entity is necessary to secure funds. • SCAG shall seek support (financial, technical, etc) at the state and federal level for a prototype regional open space database program.				X		X						
Local Government Policies															
X			OSN-12 Local governments should track and Monitor Open Space Conservation by • Considering the most recent annual report on open space conservation in planning and evaluating projects and programs in areas with regionally significant open space resources. • Ensuring consistency with the open space conservation policies and goals of the RCP to be eligible for future funding opportunities and programs administered by SCAG.	X	X	X	X	X	X			X	X	X	
X			OSN-13 Local governments should develop and implement mitigation for open space impacts by: • Promoting coordinated mitigation programs for regional projects and establish the basis for inter regional conservation strategies. • Planning development in locations least likely to cause environmental impact.	X	X		X		X			X	X	X	
Project Sponsor and Developer Policies															

IC/Best Practices	Legislation	Coordination	Constrained Policies	Potential for Direct/Indirect Benefits										Other Benefits	
				Land Use	Transportation	Air Quality	Water	Energy	Open Space	Economy	Security	Solid Waste	Public Health	Climate Change	
X			<p>OSN-14 Developers and local governments should implement mitigation for open space impacts through the following activities:</p> <ul style="list-style-type: none"> Individual projects submitted for IGR review should either avoid significant impacts to regionally significant open space resources or mitigate the significant impacts through measures consistent with regional open space policies for conserving natural lands, community open space and farmlands. All projects submitted for IGR review shall demonstrate consideration of alternatives that would avoid or reduce impacts to open space. Individual projects should include into project design, to the maximum extent practicable, mitigation measures and recommended best practices aimed at minimizing or avoiding impacts to natural lands, including, but not limited to FHWA's Critter Crossings, and Ventura County Mitigation Guidelines. Project level mitigation for RTP's significant cumulative and growth-inducing impacts on open space resources will include but not be limited to the conservation of natural lands, community open space and important farmland through existing programs in the region or through multi-party conservation compacts facilitated by SCAG. Project sponsors should ensure that transportation systems proposed in the RTP avoid or mitigate significant impacts to natural lands, community open space and important farmland, including cumulative impacts and open space impacts from the growth associated with transportation projects and improvements. Project sponsors should ensure that at least one acre of unprotected open space is permanently conserved for each acre of open space developed as a result of growth that accompanies transportation projects/improvements. 	X	X		X		X				X	X	X

OPEN SPACE AND HABITAT

Initiative Promotes	Legislation	Coordination	Strategic Initiatives	Potential for Direct/Indirect Benefits										Other Benefits	
				Land Use	Transportation	Air Quality	Water	Energy	Open Space	Economy	Security	Solid Waste	Public Health	Climate Change	
SCAG Initiatives (SCAG initiatives shall be subject to consideration for future Overall Work Plans)															
		X	OSNSI-1 SCAG shall seek to develop cooperative agreements and multi party conservation compacts to accelerate the conservation of natural lands in the region.	X	X	X	X		X				X	X	
	X		OSNSI-2 SCAG shall put in place an open space funding program to demonstrate to state/federal agencies that SCAG is prepared to serve as the regional entity to distribute state/federal funds for open space conservation.	X	X		X		X				X	X	
	X		OSNSI-3 SCAG shall seek to create new sources of funding for open space conservation.		X		X		X					X	
X			OSNSI-4 SCAG shall establish decision-making tools for identifying and prioritizing open space conservation projects, such as those by the San Diego Association of Governments (SANDAG) in distributing funding through the Transnet Environmental Mitigation Program (EMP).		X	X	X		X				X	X	
	X		OSNSI-5 SCAG should develop Memoranda of Understanding with state and federal resource agencies as necessary to facilitate the conservation of natural lands.	X	X		X		X				X	X	

2008

COMMUNITY OPEN SPACE

Community open space exists in or serves developed communities. Examples include park and recreation areas, community gardens, dedicated open space, urban forests, greenbelts and trail systems. Sustainable community open space is accessible by alternative modes of transportation, whether on foot, on bicycle, or by riding transit. It is distributed so that it serves a wide range of user groups in the region, from children to seniors and features amenities that meet the recreation and outdoor needs of its diverse users. Sustainable community open space also fulfills multiple planning and quality of life objectives contributing to watershed and water quality, air quality management and public health.

Parks and Public Health

A 1996 report by the U.S. Surgeon General found that people who engage in regular physical activity benefit from reduced risk of premature death; reduced risk of coronary heart disease, hypertension, colon cancer, and non-insulin dependent diabetes; improved physical functioning in persons suffering from poor health; and healthier cardiovascular, respiratory and endocrine systems. Physical activity also produces important psychological benefits relieving symptoms of depression and anxiety; improving mood and enhancing psychological well being.⁴

The link between obesity and community open space is particularly relevant. Over the last decade, California has experienced

one of the fastest rates of increase in adult obesity of any state in the nation.⁵ More than half of California adults now are overweight or already obese. Rates among African American and Latino adults, men over age 25 years, and adults with less than a high school education exceed 60 percent and there is no sign that the increases in obesity are slowing.⁶

The effects of obesity are putting a strain on the health care system and adding additional costs in loss of productivity. Estimated costs in California attributable to physical inactivity, obesity and overweight in 2005 were projected to reach \$28 billion. A ten percent improvement – just one person of ten who becomes more active and maintains a healthy weight over a five-year period – could result in savings of nearly \$13 billion.⁷

A report published by The Trust for Public Land concluded that strong evidence shows that when people have access to parks, they exercise more.⁸ In a study published by the CDC, creation of or enhanced access to places for physical activity led to a 25.6 percent increase in the percentage of people exercising three or more days per week. The study also found that obesity is more likely in unwalkable neighborhoods, but rates of obesity go down as measures of walkability go up.⁹

SCAG evaluated the community open space availability in 16 cities in the region and compared them to the National Recreation and Parks Association standards recommended for park types.¹⁰ As measured against NRPA's overall parks to people standard (6.25-10 acres/1,000 people) three cities



OPEN SPACE AND WATER

The availability of open space in the region directly impacts the quality of our water. As a direct result of the loss of open spaces in the region due to increased urbanization (and as a result increased impervious surfaces), the natural water cycle in which most of the water soaks into the ground during and after storm events, has been replaced by a paved drainage system.

As a consequence less water enters groundwater aquifers to become the supply for drinking water wells. Increased runoff threatens floods and carries trash and pollutants to the ocean, and we live in an environment that is increasingly more asphalt-black and concrete-gray than green.

exceeded the standard (Irvine, Pomona and Ventura) while the rest of the cities fell below the standard. Table 1 shows the results for each of the cities.

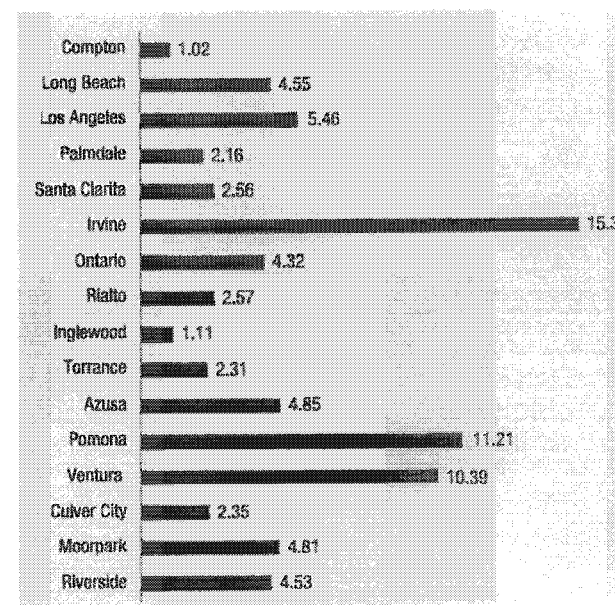
Levels of Service

As shown in Figure 3.3, the range of acres of parkland per 1,000 people varies greatly throughout several cities. Although, NPRA standards may be helpful to get a general understanding of availability of parkland in a particular city, these standards were developed in the 1930s and fail to reflect the dynamic environment and variety of today's communities. For instance, NPRA standards do not address access nor do they include many types of open space common in urban environments such as urban forests, greenbelts and trails. For that reason, SCAG is encouraging communities to utilize a new paradigm such as Levels of Service (LOS) to measure park needs for their communities. Generally, the LOS paradigm takes into account the following factors:¹¹

- Existing open space plans and policies (general plan open space element, parks and recreation plan, watershed management plan)
- Community preference as ascertained by survey, questionnaire and public workshop
- Accessibility by underrepresented groups and underserved populations, including low income or below poverty level communities, underrepresented ethnic groups,

FIGURE 3.3

Figure Title



Sources

children, seniors, disabled individuals and those who are transit dependent

- Multi-modal transportation access within ½ mile
- Multi-purpose, multi-function open space, such as river parks
- Multi-agency initiatives that cover broad geographic areas; and

- Compass Blueprint areas

LOS can be assigned similar to the system used in traffic analysis with ranking of "A" for excellent through "E" for failing. A community with a preponderance of these types of criteria provides a higher level of service

Open Space and Habitat—Community Open Space Goals

- Enhance the region's parks, trails and community open space infrastructure to support the aesthetic, recreational and quality-of-life needs, providing the highest level of service to our growing region by:
 - Creating new community open space that is interconnected, accessible, equitably distributed and provides public health benefits;
 - Improving existing community open space through urban forestry and other programs that provide environmental benefits.

Open Space and Habitat—Community Open Space Outcomes

- By 2035, all SCAG subregions have community open space systems that have an "above average" level of service (LOS).

- An "above average" LOS for community open space, by 2012, in areas that participated in SCAG's Compass Blueprint demonstration projects.
- From 2007 conditions, increase the percentage of transit trips that can access community open space in one hour or less by 2012.

2008

DRAFT

REGIONAL COMPREHENSIVE PLAN



OPEN SPACE AND HABITAT

OPEN SPACE AND HABITAT—COMMUNITY OPEN SPACE ACTION PLAN

ICM/Best Practice #	Legislation	Coordination	Constrained Policies	Potential for Direct/Indirect Benefits								Other Benefits		
				Land Use	Transportation	Air Quality	Water	Energy	Open Space	Economy	Security	Solid Waste	Public Health	Climate Change
SCAG Policies (SCAG policies shall be subject to consideration for future Overall Work Plans)														
			OSC-1 SCAG, in collaboration with its member agencies, shall work to enhance community open space and its accessibility	X	X	X	X	X	X				X	X
			OSC-2 SCAG shall continue to work with the state to develop approaches for evaluating environmental impacts within the Compass Blueprint program, particularly energy, air quality, water, and open space and habitat.	X	X	X	X	X	X			X	X	X
		X	OSC-3 SCAG and its member agencies will work with open space experts and community interest groups to develop a Level of Service ranking and evaluation system for community open space in the region.	X	X	X		X	X				X	X
		X	OSC-4 SCAG shall support local jurisdictions and other service providers in their efforts to develop sustainable communities and provide, equally to all members of society, accessible and effective services such as: public education, housing, health care, social services, recreational facilities, law enforcement, and fire protection.	X	X	X		X						X
		X	OSC-5 SCAG shall encourage member jurisdictions to work as partners to address regional outdoor recreation needs and to acquire the necessary funding for the implementation of their plans and programs.	X		X	X		X				X	
		X	OSC-6 SCAG shall encourage member jurisdictions that have trails and trail segments determined to be regionally significant to work together to support regional trail networks. SCAG shall encourage joint use of utility, transportation and other rights-of-way, greenbelts, and biodiversity areas.	X	X	X		X	X				X	X
Local Government Policies/Project Sponsor and Developer Policies														
X			OSC-7 Local governments should prepare a Needs Assessment to determine the adequate community open space level for their areas.	X	X	X	X	X	X			X	X	X
X			OSC-8 Local governments should encourage patterns of urban development and land use, which reduce costs on infrastructure and make better use of existing facilities.	X	X	X	X	X	X			X	X	X
X			OSC-9 Developers and local governments should increase the accessibility to natural areas lands for outdoor recreation.	X	X	X	X	X	X				X	X

Key Best Practice	Legislation	Coordination	Constrained Policies	Potential for Direct Indirect Benefits										Other Benefits	
				Land Use	Transportation	Air Quality	Water	Energy	Open Space	Economy	Security	Solid Waste	Public Health	Climate Change	
X			OSC-10 Developers and local governments should promote infill development and redevelopment to revitalize existing communities.	X	X	X	X	X	X				X	X	
X			OSC-11 Developers should incorporate and local governments should include land use principles, such as green building, that use resources efficiently, eliminate pollution and significantly reduce waste into their projects, zoning codes and other implementation mechanisms.	X	X	X	X	X	X			X	X	X	
X			OSC-12 Developers and local governments should promote water-efficient land use and development.	X	X	X	X	X	X			X	X	X	
X			OSC-13 Developers and local governments should encourage multiple use spaces and encourage redevelopment in areas where it will provide more opportunities for recreational uses and access to natural areas close to the urban core.	X	X	X	X	X	X			X	X	X	

OPEN SPACE AND HABITAT

Init/Best Practices	Legislation	Coordination	Strategic Initiatives	Potential for Direct/Indirect Benefits							Other Benefits			
				Land Use	Transportation	Air Quality	Water	Energy	Open Space	Economy	Security	Solid Waste	Public Health	Climate Change
SCAG Initiatives (SCAG initiatives shall be subject to consideration for future Overall Work Plans)														
		X	OSCSI-1 SCAG will work with all subregions, counties and cities to prepare needs assessments and develop and refine LOS criteria . The criteria established through the RCP and ancillary efforts will also be used as criteria for statewide bond funding	X	X	X	X	X	X			X	X	X

AGRICULTURAL LANDS

Sustainable farmlands are open spaces that maintain food production for the region and are protected from urban encroachment. Conserving sustainable farmland is essential to the overall region as these lands play a key role in maintaining the interconnections of natural lands, community open space and farmlands.

California farmers and ranchers represent a diverse group of individual businesses, with great diversity in farm size and revenue. While globally, exports of agricultural products remain a key driver of agricultural profitability, new market incentives in areas such as renewable energy for production and the development of technologies to convert raw materials into "biofuels" can expand profitability and environmental sustainability opportunities for farmers.

Table 3.1 indicates the importance of agricultural lands to the region as demonstrated by the gross value of products sold.

TABLE 3.1 TOTAL AGRICULTURAL VALUE BY COUNTY^{a,b}

County	2005	2006	2002 State Rank ^a
Riverside	1,168,671,100	1,102,438,400	10
Orange	312,336,287	N/A	22
San Bernardino	565,101,000	435,787,200	15
Los Angeles	277,844,000	N/A	21
Ventura	1,225,109,000	1,508,174,000	9
Imperial	1,286,066,000	1,365,368,000	8

^a Figures are based on total gross value as indicated in county agricultural reports for 2005 and 2006 (when available)

^b based on total value of agricultural products sold

From the USDA 2002 Census of Agriculture county profiles

Based on the 2002 USDA Census of Agriculture, county level data, Imperial, Ventura and Riverside Counties round out the top ten producing counties in the state, each with more than one billion in gross value of direct agricultural production.

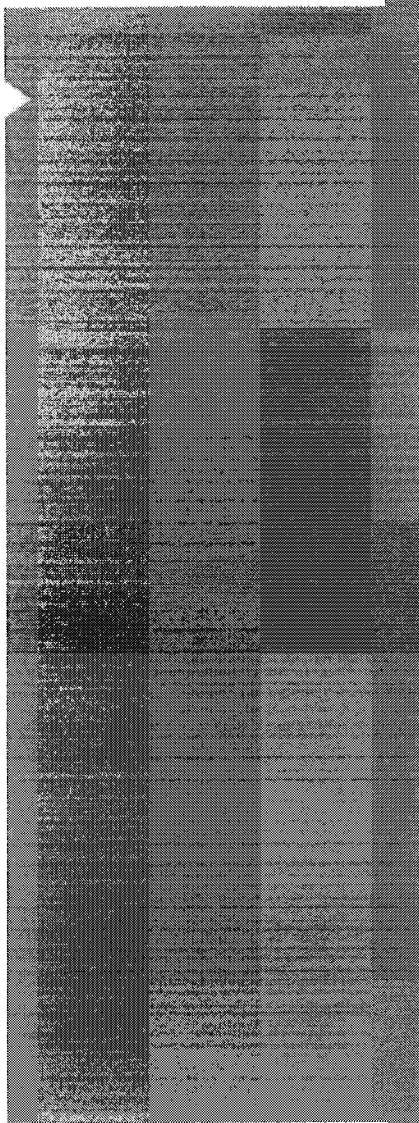
Conversion of Farmlands

Historically development patterns in the region have been tied as much to the conversion of agricultural lands as to the consumption of natural lands for urban uses. Rapid growth in the region continues to push development outward in search of cheap land that will translate into more affordable housing. Development pressures can make the value of a farmer's land higher than the value of the crops farmed on the land. A key issue in the region today is whether the high rate of farmland conversion in recent years can be slowed to prevent irreversible losses. An estimated 230,000 acres of farmland and grazing land were converted to non-agricultural uses and/or applied

DRAFT

REGIONAL COMPREHENSIVE PLAN





for development entitlements between 1996 and 2004. If this trend continues, the existing inventory of agricultural lands could be reduced by 700,000 acres before 2030.

As agriculture and suburbanization intersect, problems often arise. With so many people living close to so much commercial farming, the negative impacts flow in both directions. For suburban neighbors, there are concerns over dust, noise, odor and even the health effects of living near industrial type activities that use chemicals, heavy machinery and concentrated animal facilities. While for farmers, operating close to new neighborhoods often means reduced productivity and income, regulatory constraints, vandalism and legal liability. Often, the conflict ends in the conversion of still more farmland. **Figure 3.4** highlights those areas where farmlands and urbanization intersect.

Recently studies have looked for ways to integrate farmlands into communities that can reduce or eliminate some of the edge effects described above. New Ruralism is a framework for connecting the concepts of sustainable agriculture and New Urbanism (compact development/ smart growth). It seeks to create permanent agriculture preserves as sources of fresh food for urban regions. These preserves could take the form of green food belt perimeters, buffers between urban areas, small agricultural parks, and/or bigger preserves that include larger farms and rural settlements. The goal is to integrate small to medium scale sustainable agriculture into urban environments, these agricultural preserves can also overlap with areas for

wildlife and habitat management and for passive recreation. A major focus of New Ruralism is connecting urban areas to farms through locally grown food.

Eating Locally

The food that Southern Californians eat directly affects local and state policy and in turn, local and state policy affects the food Southern Californians eat. Currently, the federal government spends billions of dollars to subsidize grains and other crops while providing little support for fruits and vegetables. Rising health care costs and increases in diet related diseases such as diabetes and obesity indicate that healthier diets need to be a priority for the region.

Organic food is produced by farmers who emphasize the use of renewable resources and the conservation of soil and water to enhance environmental quality for future generations. Before a product can be labeled "organic," a USDA accredited certifier inspects the farm where the food is grown to make sure the farmer is following all the rules necessary to meet USDA organic standards. Companies that handle or process organic food before it gets to the local supermarket or restaurant must be certified and inspected also. **Table 3.2** shows the acres of organic farming in the region. Imperial County does not keep estimates of organic farming.

TABLE 3.2 ORGANIC FARMLANDS IN THE SCAG REGION - 2005

County	Organic Acres	Total Farmland ^a	Percent Share
Riverside	3,200	466,467	0.7
Orange	143	13,481	1.1
San Bernardino	244	34,673	0.07
Los Angeles	108	44,050	0.3
Ventura	4,712	297,074	1.6
Imperial	N/A	545,611	N/A

^a Acreage based on annual Agricultural Commissioners Reports for each county

^b Based on California Department of Conservation 2005 estimates, excludes rangelands/grazing lands

Open Space and Habitat–Agricultural Lands Goals

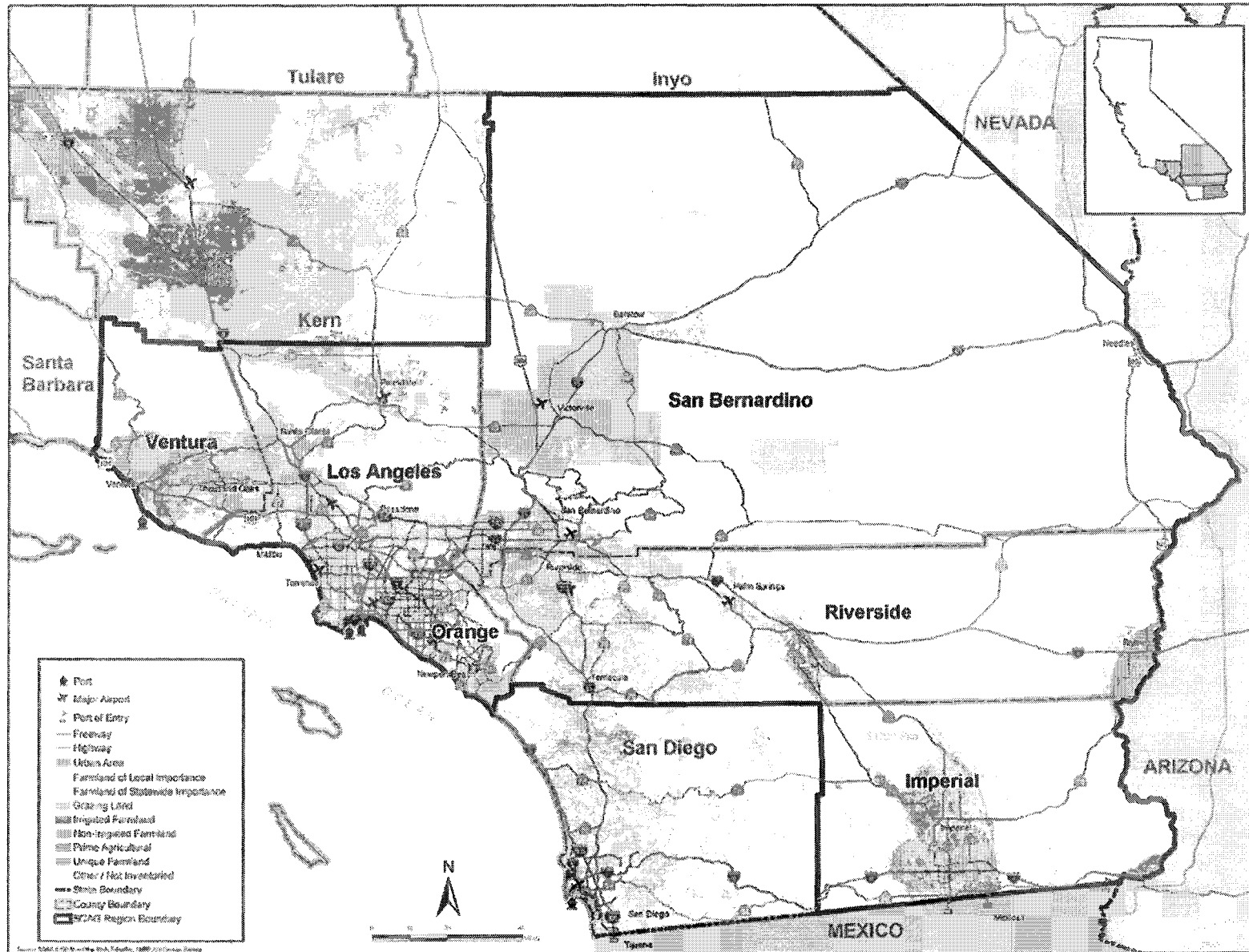
- Preserve the productivity and viability of the region's agricultural lands while supporting a sustainable economy and region by:
 - Maintaining a viable level of agriculture to support economic and food supply needs for the region while supporting sustainable energy, air quality and transportation policies;
 - Promote and support a strong locally-grown food system by encouraging community farming and developing cooperative farming initiatives that use sustainable farming practices.

Open Space and Habitat–Agricultural Lands Outcomes

- Develop a new regional farmland conservation strategy and enroll at least 6,500¹² acres of prime farmland in the first four years.
- No net loss of farmlands enrolled in the regional program through 2035.



FIGURE 3.3: PRIME FARMLAND GRAZING



Source:

OPEN SPACE AND HABITAT-AGRICULTURAL LANDS ACTION PLAN

Policy Practices				Potential for Direct/Indirect Benefits										Other Benefits	
				Land Use	Transportation	Air Quality	Water	Energy	Open Space	Economy	Security	Solid Waste	Public Health	Climate Change	
Constrained Policies															
SCAG Policies (SCAG policies shall be subject to consideration for future Overall Work Plans)															
		X	OSA-1 SCAG shall support policies that preserve and promote the productivity and viability of agricultural lands.	X	X	X	X	X	X		X	X	X	X	
X			OSA-2 SCAG shall use its IGR process to review projects with potentially significant impacts to important farmlands and recommend impact avoidance and mitigation measures.	X	X	X	X	X	X		X	X	X	X	
X		X	OSA-3 SCAG shall work with its member agencies and the region's farmland interests to develop regional guidelines for buffering farmland from urban encroachment, resolving conflicts that prevent farming on hillsides and other designated areas, and closing loopholes that allow conversion to non-farm uses without a grading permit.	X	X	X	X	X	X		X			X	
		X	OSA-4 Promote the availability of locally grown and organic food in the region.		X	X	X	X			X		X	X	
Local Government Policies															
X			OSA-5 Promote the availability of locally grown and organic food in the region. • Local governments should establish transfer of development rights (TDR) programs to direct growth to less agriculturally valuable lands (while considering the potential effects at the sites receiving the transfer) and ensure the continued protection of the most agriculturally valuable land within each county through the purchase of the development rights for these lands. • Local governments should consider other tools for the preservation of agricultural lands such as eliminating estates and ranchettes and clustering to retain productive agricultural land. • Local governments should ease restrictions on farmer's markets and encourage cooperative farming initiatives to increase the availability of locally grown food. • Local governments should consider partnering with school districts to develop farm-to-school programs.	X	X	X	X	X	X			X	X	X	
X			OSA-6 Local governments are encouraged to obtain assistance from the American Farmland Trust in developing and implementing farmland conservation measures or avoid impacts to important farmlands.	X	X	X	X	X	X		X	X	X	X	
X			OSA-7 Local governments should avoid the premature conversion of farmlands by promoting infill development and the continuation of agricultural uses until urban development is imminent; if development of agricultural lands is necessary, growth should be directed to those lands on which the continued viability of agricultural production has been compromised by surrounding urban development or the loss of local markets.	X	X	X	X	X	X		X	X	X	X	

ICB/Best Practices	Legislation	Coordination	Constrained Policies	Potential for Direct/Indirect Benefits										Other Benefits	
				Land Use	Transportation	Air Quality	Water	Energy	Open Space	Economy	Security	Solid Waste	Public Health	Climate Change	
Project Sponsors and Developers															
X			OSA-8 Developers and local governments should submit for IGR review projects with potentially significant impacts to important farmlands. Projects should include mitigation measures to reduce impacts and demonstrate project alternatives that avoid or lessen impacts, at a 1:1 ratio.	X	X	X	X	X	X		X	X	X	X	

IC/Best Practices	Legislation	Coordination	Strategic Initiatives	Potential for Direct/Indirect Benefits											Other Benefits	
				Land Use	Transportation	Air Quality	Water	Energy	Open Space	Economy	Security	Solid Waste	Public Health	Climate Change		
SCAG Initiatives (SCAG initiatives shall be subject to consideration for future Overall Work Plans)																
		X	OSASI-1 SCAG shall work with the agriculture community and other interested parties to establish a regional Farmland Conservation Strategy.	X			X		X							X
	X		OSASI-2 SCAG shall work with the state to ensure that changes in the Williamson Act will not result in the loss of preserved farmlands.	X			X		X							X
	X		OSASI-3 SCAG shall work with the state, local farming interests and other interested parties to develop a new alternative statewide farmland conservation strategy that provides flexibility in terms of years in preservation, combined with tiered tax benefits (i.e., the longer the land is in preservation, the greater the tax benefit).	X			X	X	X		X					X

Footnotes

- ¹ To provide a "snapshot" of protected lands SCAG used a database compiled by GreenInfo, a nonprofit organization specializing in GIS related services, and the Managed Lands Database compiled by the Conservation Biology Institute (CBI), a nonprofit organization specializing in conservation planning.
- ² From 2004 RTP PEIR p. 3.1-17 "In addition to direct impacts on land use, the urban footprint of new development supported by the 2004 RTP is expected to consume 500,000 to 700,000 acres of vacant, undeveloped land by 2030." Direct impacts include 7,700 of grazing land, 1,400 acres of open space, 6,500 acres of prime farmland and 21,300 acres of vacant lands
- ³ Core areas are habitat blocks, linkages, or watershed units that protect regional populations of native species, including sensitive, endemic, keystone and umbrella species, and the ecological processes that maintain them.
- ⁴ CDC. Physical Activity and Health: A Report on Recommendations of the Task Force on Community Preventive Services. Retrieved online August 23, 2007 <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5018a1.htm>
- ⁵ CDC. Prevalence of Obesity Among U.S. Adults by State Behavioral Risk Factor Surveillance System (1991–2001). Retrieved online August 23, 2007, http://www.cdc.gov/nccdphp/dnpa/obesity/trend/prev_reg.htm.
- ⁶ California Department of Health Services. The Economic costs of Physical Inactivity, Obesity, and Overweight in California Adults: Health Care, Workers' Compensation, and Lost Productivity. Retrieved online August 23 2007 <http://www.dhs.ca.gov/ps/cdic/cpns/press/downloads/CostofObesityToplineReport.pdf>.
- ⁷ California Department of Health Services. The Economic costs of Physical Inactivity, Obesity, and Overweight in California Adults: Health Care, Workers' Compensation, and Lost Productivity. <http://www.dhs.ca.gov/ps/cdic/cpns/press/downloads/CostofObesityToplineReport.pdf>, 2005.
- ⁸ The Trust for Public Land. The Benefits of Parks. Retrieved online August 23, 2007 http://www.tpl.org/content_documents/parks_for_people_Jul2005.pdf
- ⁹ CDC. Increasing Physical Activity A Report on Recommendations of the Task Fore on Community Preventive Services. Retrieved online August 23, 2007 <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5018a1.htm>
- ¹⁰ Complete results of the case studies are available in the SCAG's Regional Open Space Program, 2008
- ¹¹ For a complete description of LOS and Needs Assessment see SCAG's Regional Open Space Program, 2008
- ¹² 6,500 acres identified of prime farmland is the number of acres of identified as directly impacted by projects in the 2004 RTP.



Water

2008

DRAFT

REGIONAL COMPREHENSIVE PLAN

THE CHALLENGE

Recent projections indicate that nearly half of the state's population will reside within the SCAG region by 2030.¹ This underscores the importance of questions about Southern California's future water supply, and of reliably meeting our urban water demands in a way that is sensitive to both ecological imperatives and the evolving emphasis on sustainable development. We also face challenges in how we assure a high-quality water supply for consumption, recreational, habitat, and other needs.

Eliminating water quality impairments throughout the region's urban watersheds is a major challenge. These impairments (usually caused by "non-point" source pollutants) are largely caused by urban and stormwater runoff and must be cleaned up under the Clean Water Act. As a result, water quality regulators are imposing significant and costly pollution control measures on local agencies in the region with compliance deadlines.

Water Supply

Water supplies within the SCAG region come from a blend of local and imported sources that will increasingly be challenged to meet the needs of a growing region. Local sources—including

groundwater, surface water runoff, and reclamation—comprise about one-quarter of the region's total supplies. The balance consists of water imported from Northern California via the State Water Project (SWP) and from the Colorado River via the Colorado River Aqueduct (CRA).

Local Supplies

Groundwater. Groundwater accounts for most the region's local supply of fresh water. In California, groundwater typically provides 30 percent of the urban and agricultural water requirement. In Southern California, groundwater use tends to range between 23 percent in average years and 29 percent in dry years.² Groundwater basins contain a large volume of water resulting primarily from the percolation of natural runoff. Through proper management, it is also possible to use these basins as natural storage facilities.

However, the over-pumping of these basins has resulted in the overdraft of many basins (i.e., more groundwater is used than stored). According to DWR estimates, the state has a groundwater overdraft of between 1 and 2 million acre-feet (maf)³ during average years.⁴ Because of this, many water agencies have programs designed to address this imbalance. Under these programs, groundwater recharge is accomplished



by diverting water to surface ponds that percolate down into the basin, or through the direct injection of water into the basins during periods of surplus.

Recycling.⁵ Recycling involves the collection of wastewater from treatment plants followed by secondary treatment to make the effluent suitable for non-potable uses. The recycled water is disposed of in one of three ways: ocean outfall, live stream discharge or reuse. These uses include irrigation, commercial and industrial processes, seawater intrusion barriers and groundwater recharge. In this way, recycled water is used to free up imported water for consumptive use.

Many of the groundwater basins within SCAG's region are overdrafted and some, along the coast, are threatened by seawater intrusion. While recycled water can play an important role in both areas, cost and regulation represent barriers. While a large potential market exists for the use of recycled water for groundwater replenishment and seawater barriers, realizing this potential will require modifying existing regulations based on future studies of the health effects of recycled water⁶, as well as:

- Funding contributions by all parties benefiting, directly or indirectly, from the use of recycled water.
- Reviewing recycled water regulations to ensure streamlined administration, public health and environmental protection.

- Planning and cooperative partnerships at the local, regional and statewide levels.
- Conducting additional research focusing on public perceptions and acceptance, new technologies and health effects.

These strategies can provide recycled water for potential markets, such as industrial uses (e.g., cooling tower makeup water, boiler feed water), golf courses, parks, schoolyards, cemeteries and greenbelts. Because these users tend to be high demand, continuous flow customers, they allow water utilities to base load these operations rather than contend with seasonal and diurnal flow variations, thereby reducing the need for storage and other peak demand resources.

Surface Storage. Surface storage involves the use of reservoirs to collect water for later release and use. Surface storage has played an important role in California where the pattern and timing of water use does not always match the natural runoff pattern. Surface storage can increase benefits from other water management activities such as water transfers, conjunctive management, conveyance improvements and emergency use.

While our growing population, the precarious situation in the Bay-Delta, and the prospect of early snow melt under some climate change scenarios all point to the need for increased storage capacity, there are issues. New storage can affect environmental and human conditions, create economic impacts for the surrounding community, and impact flows

both up and downstream of diversions. New reservoirs may reduce property tax revenues to local governments or increase values by providing a more reliable water supply. Regulatory requirements require surface storage investigations to consider potential impacts to stream flow regimes, designated wild and scenic rivers, water quality issues, changes in stream geomorphology, loss of fish and wildlife habitat, and risk of failure during seismic and operational events. New projects may need to address additional impacts under the application of various laws, regulatory processes and statutes.⁷

Conservation. Conservation, or urban water use efficiency, involves technological or behavioral changes in indoor and outdoor residential, commercial, industrial and institutional demand that lowers the demand for water. Once invoked primarily in response to drought or emergency water shortage situations, efficiency and conservation have become viable long-term supply options, saving considerable capital and operating costs, avoiding environmental degradation, and creating multiple benefits. Conserved water can be carried over to another time if a supplier has surface or groundwater storage capacity, or stores water by agreement with an agency that maintains a groundwater bank.

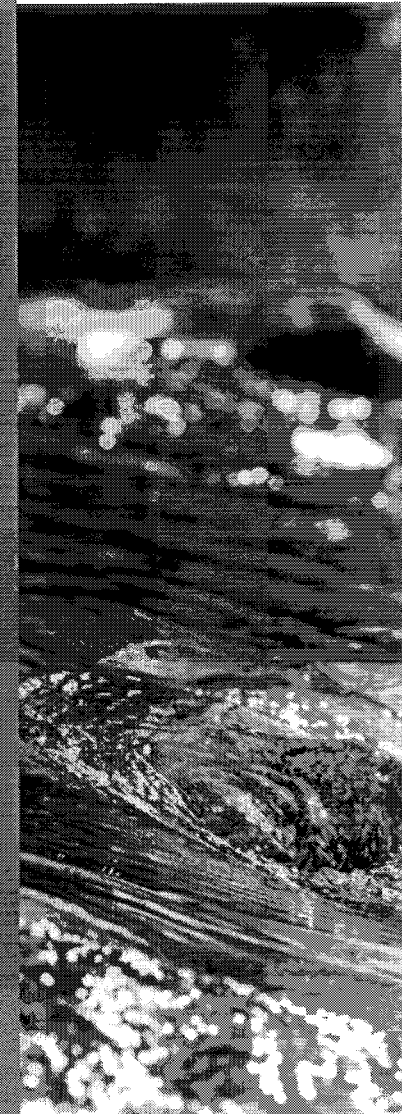
A major conservation challenge is to follow the California Urban Water Conservation Council's Memorandum of Understanding and implement 14 cost-effective "best management practices" for urban conservation.⁸ These efforts should target water-using devices and practices involving residential

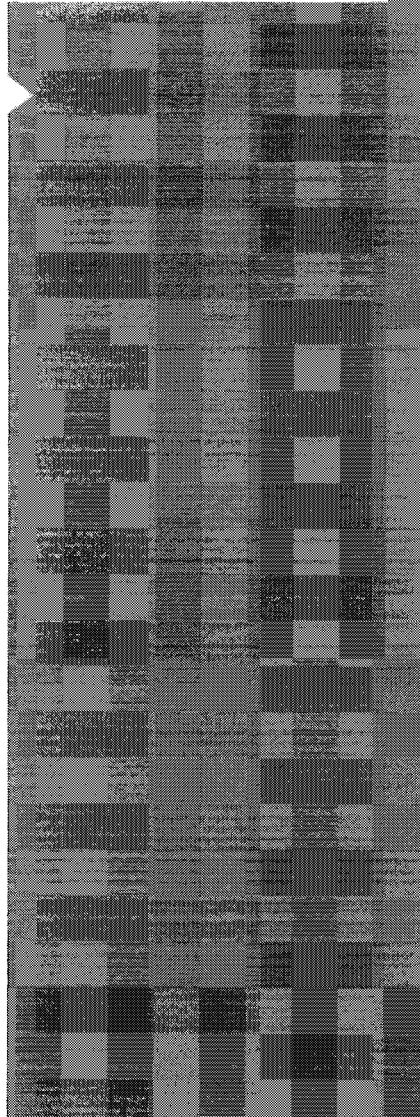
dwelling; irrigation; and commercial, industrial and institutional operations. More recently, water agency initiatives have targeted irrigation and the commercial, industrial and institutional sector. Another challenge is to reduce the common practice of over-watering yards. The resulting surface water runoff is an ongoing source of non-source point pollution that causes water impairments requiring remediation.

Desalination. Recent developments in membrane technology and plant siting strategies have increased the financial appeal of this resource option. For example, MWD estimates that its local supplies could consist of as much as 150 thousand acre-feet of desalinated water by 2050. However, several barriers must be overcome to make it a more viable water source. These include high capital and operational costs for power and membrane replacement, funding, environmental issues and addressing permitting requirements (e.g., California Coastal Commission).

Imported Supplies

Southern California has historically depended on imported water to supplement local supplies. According to 1998 estimates, the region imported more than 6 million acre-feet (maf) of water annually, accounting for nearly two-thirds of the total water used in the region.⁹ Water imports are conveyed by three major facilities: The Los Angeles Aqueduct, completed in 1913 and operated by the Los Angeles Department of Water and Power; the Colorado River Aqueduct, completed in 1941 and





operated by MWD; and the State Water Project, completed in 1973¹⁰ and operated by DWR.

State Water Project. The State Water Project (SWP), managed by DWR, is the largest state-owned multi-purpose water project in the country. It delivers water from the Sacramento Delta to 29 state water contractors, providing water to more than 23 million Californians, irrigation for 750,000 acres of agricultural lands, environmental benefits to wildlife refuges and recreational facilities.¹¹

Aside from hydrology, the biggest threats to the reliability of SWP supplies are conditions within the Delta. For decades, the Bay-Delta has been the focus of competing interests: economic, ecological, urban and agricultural. These demands have combined with nature to gradually undermine the integrity of the complex system of levees that form the backbone of Bay-Delta water conveyance system. As levees erode, saltwater from the San Francisco Bay continues to encroach on the Delta, increasing salinity and undermining water quality. The presence and apparent decline of endangered species in the Delta have altered pumping operations. The prospect of long shutdowns presents a real threat to the supply reliability of all agencies drawing water from the Delta.¹²

A second concern involves the SWP's need to meet increasingly strict drinking water regulations. For example, following chlorination treatment, SWP water has disinfection by-products that require more advanced and costly treatment such as ozonation. Meeting these regulations and reducing

treatment costs will require improving the Delta water supply by cost-effectively combining alternative sources of water, source improvement, and treatment facilities.

In 2000 CALFED, a collaboration of 25 state and federal agencies, released a 30-year plan for Delta restoration and long-term management. The CALFED program, currently overseen by the Bay-Delta Authority, is tasked with addressing the complex series of issues including storage, conveyance, water quality, levee system integrity, and ecosystem restoration.¹³ A more recent "Delta Vision" Task Force is charged with presenting to the Governor a set of recommended actions for long-term solutions to the problem-plagued Bay-Delta ecosystem.

Colorado River. The Colorado River represents another major source of imported supply for the SCAG region. Water is conveyed from the Colorado River to urban Southern California via the Colorado River Aqueduct, owned and operated by Metropolitan.¹⁴ Seven states share legal rights to Colorado River Water. Institutional arrangements have varied the amount of imported water available to Southern California. The need to stabilize and expand this supply will be a key challenge for the future.

Los Angeles Aqueduct. The city of Los Angeles imports water from the eastern Sierra Nevada through the Los Angeles Aqueduct (LAA). The original aqueduct was completed in 1913 to import water from the Owens Valley. In 1940 the aqueduct was extended to the Mono Basin. Water supplies have varied based on snowpack levels in Eastern Sierra Nevada

and court decisions restricting the amount of water than can be imported via the LAA.¹⁵

Transfers and Water Banking. Following the basic principles of *Integrated Resource Planning* (IRP), urban water agencies within Southern California may continue to diversify their sources and reduce dependence on imported water by entering into contractual arrangements with agricultural irrigation districts. Irrigation agencies agree to adopt water conservation measures or to engage in land fallowing.¹⁶ Water that would otherwise be used to irrigate crops is then purchased, or transferred, to urban water agencies. Frequently, this water is stored, or *banked*, in aquifers for use during times of shortage, thus increasing the urban agencies' supply reliability. Water banking also occurs during wet years as rainwater is directed to groundwater recharge facilities and spreading basins for use during times of shortage.

Climate Change¹⁷

Another challenge that overarches all local water supply issues is the global phenomenon of climate change. Current scientific research suggests that increasing concentrations of atmospheric greenhouse gases are producing global-scale temperature and precipitation changes. Models have predicted that by the end of the century, average winter temperatures could increase by more than 7 degrees, and summer temperatures could increase by as much as 18 degrees. The results of precipitation studies have been less definitive, ranging broadly

between models and scenarios. Predictions from these models range from slight increases in precipitation to decreases of up to 30 percent. Nevertheless, it is an issue that water agencies are increasingly accounting for as part of the standard water planning processes.

While uncertainties exist about the exact timing, magnitude and regional impacts of these temperature and precipitation changes, researchers have identified several issues of particular importance to water resource planners. These include:

- A reduction in the Sierra Nevada snowpack
- Increased intensity and frequency of extreme weather events
- Rising sea levels resulting in
 - An increased risk of damage from storms, high-tide events and the erosion of levees.
 - Potential pumping cutbacks on the State Water Project and the Central Valley Project.

Other important issues associated with climate change include:

- Effects on local supplies such as groundwater.
- Changes in urban and agricultural demand levels and patterns.



- Impacts to human health from water-borne pathogens and water quality degradation.
- Declines in ecosystem health and function.
- Alternations in power generation and pumping operations.

Water also contributes to the generation of greenhouse gases through its energy demands. The energy component in developing and managing water resources is a growing challenge for the region. Energy is involved in each stage of water's use cycle: source and conveyance, treatment, distribution, consumption and wastewater treatment. In a Los Angeles Department of Water and Power analysis, the energy costs in kilowatt hours per acre foot of water (kwh/af) and CO₂ emission in pounds per acre foot of water (lbs/af) ranged as follows:

- Tertiary Treated Recycled Water: 428 kwh/af and 558 lbs/af
- Pumped Groundwater: 519 kwh/af and 677 lbs/af
- State Project Water Imports: 2580 kwh/af and 2154 lbs/af
- Seawater Desalination: 4100 kwh/af and 5345 lbs/af

In these ways, the management of energy and water supply and water quality are closely inter-related and must be considered

together when regional growth and water resource strategies are developed.

These possibilities present challenges to future water planning efforts. Ongoing research concerning the likelihood and potential impacts of climate change needs to be carefully monitored and explicitly addressed by agency planning documents.

Water Demand

Water demand in California can generally be divided between urban, agricultural and environmental uses. According to DWR, for the state as a whole, these three sectors accounted for 11 percent, 41 percent and 48 percent, respectively, during 2000—a year characterized by “normal” rainfall.¹⁸

In the SCAG region, approximately three-quarters of potable water are provided from imported sources. Annual water demand fluctuates in relation to available supplies and the rainfall in a given year. During periods of drought, water demand can be reduced significantly through conservation while demands on imported supplies tend to decline significantly during years of above average rainfall.

An important challenge relates to the relationship between urban growth patterns and the demand for water. A compact growth pattern requires less water than a diffuse pattern. A compact regional pattern would result in fewer impervious surfaces, increasing opportunities for groundwater recharge.

Wastewater

Much of the urbanized areas of Los Angeles and Orange Counties are serviced by three large publicly owned treatment works (POTWs): the City of Los Angeles Bureau of Sanitation Hyperion Facility, the Joint Outfall System of the Los Angeles County Sanitation Districts, and the Orange County Sanitation District treatment plant. These three facilities handle more than 70 percent of all wastewater generated within the SCAG region and will be increasingly strained as the region continues to grow. In addition, medium sized POTWs (greater than 10 million gallons per day, or mgd) and small treatment plants (less than mgd) service smaller communities in Ventura County.

Water Quality¹⁹

Non-Point Source Pollution. Surface water resources in the SCAG region include creeks and rivers, lakes and reservoirs, and the inland Salton Sea.²⁰ Reservoirs serving flood control and water storage functions exist throughout the region.

Protecting the quality of water in these bodies will be an ongoing challenge. For example, lining the Los Angeles River and the Santa Ana River with concrete for flood control purposes has made them conveyance systems that concentrate and transfer urban pollutants and waste to the ocean. Estimates show that two-thirds of California's water bodies were threatened or impaired by non-point sources of pollution. Point source pollution refers to contaminants that enter a watershed, usually

through a pipe (e.g., discharges from sewage treatment plants and industrial facilities). Non-point source pollution, also known as "pollution runoff," is diffuse and most evident in dry weather conditions. Non-point pollution comes from everywhere, is significantly influenced by land uses, and considered one of the major water quality problems.

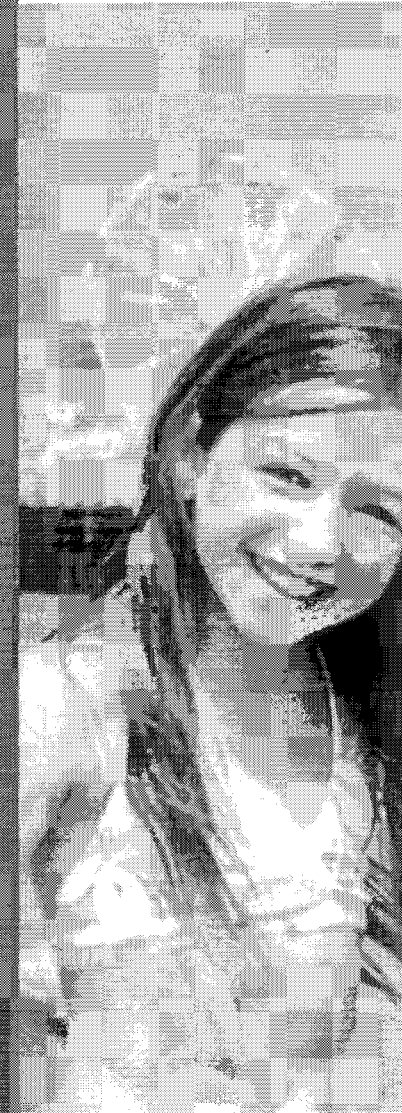
A major challenge from non-point sources is the urbanizing of the region. Buildings, roads, sidewalks, parking lots and other impervious surfaces alter the natural hydrology and prevent the infiltration of water into the ground. As land is urbanized, more stormwater flows faster off the land, the greater volume increases the possibility of flooding, and the high flow rates do not allow for pollutants to settle out, increasing pollutant concentrations in the runoff. Generally, the higher the percentage of impervious surfaces, the greater the degradation in stream water quality.

The California State Water Quality Control Board has identified the following pollutants of concern in urban runoff.²¹

- **Sediment.** Excessive sediment loads in streams can interfere with photosynthesis, aquatic life respiration, growth and reproduction.
- **Nutrients.** Nitrogen and phosphorus can result in eutrophication of receiving waters (excessive or accelerated growth of vegetation or algae), reducing oxygen levels available for other species.

DRAFT

REGIONAL COMPREHENSIVE PLAN



WATER AND OPEN SPACE

The availability of open space in the region directly impacts the quality of our water. As a direct result of the loss of open spaces in the region due to increased urbanization (and as a result increased impervious surfaces), the natural water cycle in which most of the water soaks into the ground during and after storm events, has been replaced by a paved drainage system.

As a consequence less water enters groundwater aquifers to become the supply for drinking water wells, increased runoff threatens floods and carries trash and pollutants to the ocean, and we live in an environment that is increasingly more asphalt-black and concrete-gray than green.

- **Bacteria and viruses.** Pathogens introduced to receiving waters from animal excrement in the watershed and by septic systems can restrict water contact activities.
- **Oxygen demanding substances.** Substances such as lawn clippings, animal excrement and litter can reduce dissolved oxygen levels as they decompose.
- **Oil and grease.** Hydrocarbons from automobiles are toxic to some aquatic life.
- **Metals.** Lead, zinc, cadmium and copper are heavy metals commonly found in stormwater. Other metals introduced by automobiles include chromium, iron, nickel and manganese. These metals can enter waterways through storm drains along with sediment, or as atmospheric deposition.
- **Toxic pollutants.** Pesticides, phenols and polynuclear aromatic hydrocarbons (PAHs) are toxic organic chemicals found in stormwater.
- **Floatables.** Trash in waterways increases metals and toxic pollutant loads in addition undesirable aesthetic impacts.

The general quality of groundwater in the SCAG region tends to be degraded as a result of land uses and water management practices. Fertilizers and pesticides typically used on agricultural lands infiltrate and degrade groundwater. Septic

systems and leaking underground storage tanks can also impact groundwater. Water quality concerns include:

Salinity. Over-pumping can result in saltwater intrusion from the ocean, further degrading groundwater quality. Wastewater discharges can result in salt buildup from fertilizer and dairy waste. Water agencies need to work with other stakeholders on researching and developing salinity management goals and action plans, which include blending low and high salinity water and the desalination of brackish water.

Perchlorate. Ammonium perchlorate is a primary ingredient of solid rocket propellant and is used in the manufacture of munitions and fireworks. It is readily soluble in water, highly mobile in groundwater, and has significant health effects on the thyroid.²² Small amounts have been found in the Colorado River with higher concentrations in local groundwater basins. The challenge is to find cost-effective ways to remove perchlorates using conventional water treatment, nanofiltration and reverse osmosis.

Total Organic Carbon and Bromide. When source water containing high levels of total organic carbon (TOC) and bromide is treated with disinfectants such as chlorine or ozone, disinfection byproducts (DBP) are created. Studies show links between DBP exposure and certain cancers, as well as reproductive and developmental effects. TOCs and bromide in Delta water present challenges to monitor and maintain safe drinking water supplies. The challenge is to better protect SWP water supplies in a cost-effective manner.

Methyl Tertiary Butyl Ether and Tertiary Butanol. Until recently, MTBE was the primary oxygenate in virtually all gasoline used in California to address air pollution issues. However, MTBE has caused a serious problem, as it is very soluble in water and moves quickly into the groundwater. One gallon of MTBE alone (11% MTBE by volume) is enough to contaminate about 16.5 million gallons of water at 5 micrograms per Liter. We must find ways to reduce the cost of treating groundwater wells, or risk the temptation to seek increased imports at lower cost. A combination of advanced oxidation processes followed by granular activated carbon can reduce MTBE levels by up to 90 percent.

Arsenic. Arsenic, a naturally occurring substance in drinking water, has been identified as a risk factor for lung and urinary bladder cancer. Several local water sources contain arsenic concentrations exceeding the federal standard. It appears likely that current treatment standards will increase cost but not necessarily decrease local water supplies. However, if treatment cost increases are sufficient, some water agencies in Southern California may choose to increase their use of imported water to avoid this additional cost.

Uranium. Colorado River water has been compromised by a 10.5-million-ton pile of uranium mine tailings at Moab, Utah. Rainwater has seeped through the pile and contaminated the local groundwater, causing a flow of contaminants into the river. While the Department of Energy has agreed to move the tailings, remediating the site will require Congressional appro-

priations, and maintaining support for a cleanup will require close coordination and cooperation with other Colorado River users.

Watershed Planning

The way in which land is used—the type of use and level of intensity—has a direct effect on water supply and quality. Watershed management is the process of evaluating, planning, managing, restoring and organizing land and other resource use within an area of land that has a single common drainage point. Watershed management tries to provide sustainable development while maintaining a sustainable ecosystem.

Accommodating growth challenges us to find ways to promote compact, mixed-use development, which can reduce water demand and creates a smaller urban footprint. By reducing impervious surfaces, development generates less surface runoff, and minimizes dispersion into watersheds and groundwater recharge areas receiving this runoff.²³

THE PLAN

The RCP focuses on three strategies for addressing water supply and quality issues. First, the region needs to develop sufficient water supplies to meet the water demands created by continuing regional growth. Second, we can improve our water quality by implementing land use and transportation policies and programs that promote water stewardship and eliminate



WATER AND OPEN SPACE

Open space and park lands have the potential to enhance groundwater resources (by preserving or expanding the area available for natural groundwater recharge), improve surface water quality (to the extent that these open spaces filter, retain, or detain stormwater runoff), and provide opportunities to reuse treated runoff or recycled water for irrigation (thereby reducing the demand for potable water).

The loss of functional native habitat and the alteration of natural channels in urbanized areas (such as the Los Angeles River) have also reduced the extent to which natural processes can remove contaminants in urban and stormwater runoff, cycle nutrients through watersheds, and provide functional habitat for species.

water impairments and waste. Finally, the region needs to improve comprehensive and collaborative watershed planning that yields waterwise programs and projects.

IMPROVE WATER SUPPLY AND MANAGE DEMAND

The region needs to improve its stewardship of water supplies and manage demand in order to address substantial growth in population and economic activities. By promoting policies that encourage environmentally-sustainable imports, encouraging local conservation and conjunctive use, reclamation and reuse.

LAND USE AND TRANSPORTATION POLICIES

The RCP encourages development strategies that can reduce the region's impervious surfaces and reduce future impacts on surface and groundwater quality and supply. On a regional or watershed level, greater overall water quality protection is achieved through more concentrated or clustered development. Concentrated development protects the watershed by leaving a larger percentage of it in its natural condition.

WATERSHED PLANNING

Our region needs to better implement collaborative watershed planning that produces waterwise programs. By promoting better designed communities and projects, we can produce multiple benefits and ecosystem protections. This can be done

by integrating local government planning efforts with those of special districts, environmental advocates and other watershed stakeholders.

WATER GOALS

- Develop sufficient water supplies through environmentally sustainable imports, local conservation and conjunctive use, reclamation and reuse to meet the water demands created by continuing regional growth.
- Achieve water quality improvements through implementation of land use and transportation policies and programs that promote water stewardship and eliminate water impairments and waste in the region.
- Foster comprehensive and collaborative watershed planning within the region that produces waterwise programs and projects with multiple benefits and ecosystem protections, integrating local government planning efforts with those of special districts, environmental advocates and other watershed stakeholders.

WATER OUTCOMES

- Regional per capita water demand reduced by 25% by 2030 with waterwise land use and local management policies. (Local land use policies and water practices are

established to maximize efficient use of local water resources and reduce water demand in the SCAG region.)

- Regional water impairments eliminated by 2030 with the use of stormwater and urban runoff controls and improved retention and infiltration systems. (Land use and transportation policies are established to minimize pollution entering water bodies and increase on-site water management.)
- All member agencies included as active participants in regional watershed planning and implementation efforts, including concurrent updating of basin plans within the region. (Coordination and collaboration of local agencies, water districts and other watershed stakeholders to maximize all investments in water management for public benefit.)



WATER

WATER ACTION PLAN

Best Practices	Legislation	Coordination	Constrained Policies	Potential for Direct/Indirect Benefits												Other Benefits	
				Land Use	Transportation	Air Quality	Water	Energy	Open Space	Economy	Security	Solid Waste	Public Health	Climate Change			
SCAG Policies (SCAG policies shall be subject to consideration for future Overall Work Plans)																	
X			WA-1 SCAG shall create a compendium of best management practices, case studies, and model ordinances that will give 'waterwise' guidance for development entitlements and growth management policymaking.				X										
		X	WA-2 SCAG shall promote water conservation awareness throughout the region, featuring the connections between water and other resources, including energy and the timing of water use.			X	X	X								X	
	X		WA-3 SCAG shall encourage water reclamation throughout the region where it is cost-effective, feasible, and appropriate to reduce reliance on imported water.				X	X			X					X	
		X	WA-4 SCAG shall encourage coordinated watershed management planning at the sub-regional level by (1) providing consistent regional data; (2) serving as a liaison between affected local, state, and federal watershed management agencies; and (3) ensuring that watershed planning is consistent with comprehensive regional planning objectives and challenges.				X	X									
		X	WA-5 SCAG shall facilitate information sharing between local water agencies and local jurisdictions throughout the region, in order to evaluate future water demands, prepare realistic Urban Water Management Plans, and support sustainable water and growth management policies.	X			X										
		X	WA-6 SCAG shall encourage the integration of water stewardship practices and unify investment incentives among all stakeholders, prioritizing resources for those investments that optimize returns and outcomes and best meet fiscal limitations, growth realities and sustainability objectives.				X										
	X		WA-7 SCAG shall provide, as appropriate, legislative support and advocacy for regional water conservation, supply, and water quality projects.				X										
	X		WA-8 SCAG shall develop a policy framework for integrating water resources planning and Compass Blueprint planning strategies in order to coordinate positive interactions between local land use policies and regional water supply and water quality actions over time.	X			X										
Local Government Policies																	
X			WA-9 Developers and local governments should consider potential climate change hydrology and attendant impacts on available water supplies and reliability in the process of creating or modifying systems to manage water resources for both year-round use and ecosystem health.				X		X		X					X	
X			WA-10 Developers and local governments should include conjunctive use as a water management strategy when feasible.				X										
X			WA-11 Developers and local governments should encourage urban development and land uses to make greater use of existing and upgraded facilities prior to incurring new infrastructure costs.	X			X			X							

Policy/Best Practices	Legislation	Coordination	Constrained Policies	Potential for Direct/Indirect Benefits										Other Benefits	
				Land Use	Transportation	Air Quality	Water	Energy	Open Space	Economy	Security	Solid Waste	Public Health	Climate Change	
X			WA-12 Developers and local governments should reduce exterior uses of water in public areas, and should promote reductions in private homes and businesses, by shifting to drought-tolerant native landscape plantings (xeriscaping), using weather-based irrigation systems, educating other public agencies about water use, and installing related water pricing incentives.				X	X						X	
X			WA-13 Developers and local governments should protect and preserve vital land resources such as wetlands, groundwater recharge areas, woodlands, riparian corridors, and production lands. The federal government's policy of 'no net loss' for wetlands should be applied to all of these land resources.				X		X					X	
X			WA-14 Local governments should amend building codes to require dual plumbing in new construction, and provide incentives for plumbing retrofits in existing development, to enable the safe and easy use of recycled water in toilets and for landscaping.	X			X								
X			WA-15 Local governments should amend ordinances as necessary to allow municipal and private outdoor use of recycled water for all parks, golf courses, and outdoor construction needs.				X								
	X		WA-16 Local governments should incentivize the use of recycled water through pricing structures that make it an attractive alternative to fresh water in non-potable situations.				X				X				
		X	WA-17 Local governments should remove salts and other contamination in the region's major groundwater basins in order to increase conjunctive use of water resources and extend groundwater storage.				X				X		X		
		X	WA-18 Local governments should create stable sources of funding for water and environmental stewardship and related infrastructure sustainability, including purchase and implementation of green infrastructure.				X		X						
		X	WA-19 Water purveyors should develop and implement tiered water pricing structures to discourage the waste of water and minimize polluting runoff.				X						X		
X			WA-20 Local governments should use both market and regulatory incentive mechanisms to encourage 'water wise' planning and development, including streamlining and prioritizing projects that minimize water demand and improve water use efficiencies.				X	X						X	
		X	WA-21 Local governments should develop comprehensive partnership approaches to remove and prevent water impairments, replacing the existing regulatory command and control approach that has created delays and distrust.				X								
		X	WA-22 Local governments should create opportunities for pollution reduction marketing and other market-incentive water quality programs.				X						X		
X			WA-23 Local governments should encourage Low Impact Development and natural spaces that reduce, treat, infiltrate and manage runoff flows caused by storms and impervious surfaces.	X			X		X						
X			WA-24 Local governments should prevent development in flood hazard areas that do not have appropriate protections, especially in alluvial fan areas of the region.	X			X		X				X		

IG Best Practices	Legislation	Coordination	Constrained Policies	Potential for Direct/Indirect Benefits										Other Benefits	
				Land Use	Transportation	Air Quality	Water	Energy	Open Space	Economy	Security	Solid Waste	Public Health	Climate Change	
X			WA-25 Local governments should implement green infrastructure and water-related green building practices through incentives and ordinances. Green building resources include the U.S. Green Building Council's Leadership in Energy and Environmental Design, Green Point Rated Homes, and the California Green Builder Program.	X		X	X	X	X		X	X	X	X	
		X	WA-26 Local governments should integrate water resources planning with existing greening and revitalization initiatives, such as street greening, tree planting, and parking lot conversions, to maximize benefits and share costs.	X		X	X		X				X	X	
		X	WA-27: Developers & LG should maximize pervious surface area in existing urbanized areas to protect water quality, reduce flooding, allow for groundwater recharge, and preserve wildlife habitat. New impervious surfaces should be minimized to the greatest extent possible, including the use of in-lieu fees and off-site mitigation.												
X			WA-28 Local governments should maintain and update Best Management Practices for water resource planning and implementation.				X								
		X	WA-29 Local governments should coordinate with neighboring communities and watershed stakeholders to identify potential collaborative mitigation strategies at the watershed level to properly manage cumulative impacts within the watershed.				X								
		X	WA-30 Local governments should adopt MOUs and JPAs among local entities to establish participation in the leadership and governance of integrated watershed planning and implementation.				X								
		X	WA-31 Local governments should increase participation in the implementation of integrated watershed management plans, including planning effort initiated in neighboring communities that cross jurisdictional lines.				X								
X			WA-32 Developers and local governments should pursue water management practices that avoid energy waste and create energy savings or new supplies.			X	X	X							X
State and Regional Agency Policies															
	X		WA-33 Develop fair and consistent safety guidelines for the use of reclaimed and recycled wastewater for non-potable uses, in order to facilitate more widespread acceptance and use.				X						X		
X			WA-34 Design and operate regional transportation facilities so that stormwater runoff cannot contaminating the surrounding watershed ecosystem.		X		X								

Best Practices	Legislation	Contribution	Strategic Initiatives	Potential for Direct/Indirect Benefits										Other Benefits	
				Land Use	Transportation	Air Quality	Water	Energy	Open Space	Economy	Security	Solid Waste	Public Health	Climate Change	
SCAG Initiatives (SCAG initiatives shall be subject to consideration for future Overall Work Plans)															
		X	WASI-1 SCAG shall support research into the feasibility and potential environmental impacts of saltwater desalination as a means of increasing local water supply.				X	X			X				X
		X	WASI-2 SCAG shall encourage a streamlined water quality regulatory implementation, including identification and elimination of overlaps with other regulatory programs to reduce economic impacts on local businesses and governments.				X								
X			WASI-3 SCAG shall encourage restoring all watersheds in the region to 90 percent pervious surface. Increases in pervious surfaces should be accomplished through new development models and materials, such as green roofs, porous pavement, natural stormwater management, increased park space, and expansion of the urban forest.	X			X								
		X	WASI-4 SCAG shall support improving water quality in the region's imported water supplies.				X								
		X	WASI-5 SCAG shall encourage preventing non-native/invasive species from adversely affecting regional water supplies and quality.				X								
		X	WASI-6 SCAG shall encourage the use of stormwater permits on a watershed-wide basis.				X								
		X	WASI-7 SCAG shall support the development and implementation of public education and outreach efforts at the local level regarding watershed management for community leaders and educators. In addition, SCAG will encourage the implementation of these policies at schools (K-12).				X								

Footnotes

- ¹ State of California, Department of Finance, *Population Projections for California and Its Counties 2000-2050*. Sacramento, CA. July 2007.
- ² Department of Water Resources, *California's Groundwater-Bulletin 118*. Update 2003. Located at <http://www.groundwater.water.ca.gov/bulletin118/update2003/index.cfm>
- ³ The acre-foot is a common measure of volume in discussions of water supply. An acre-foot (af) is the amount of water required to fill an acre-size area with one foot of water.
- ⁴ California Department of Water Resources, *Draft Bulletin 118*. Updated 2003.
- ⁵ Excerpted from Metropolitan Water District of Southern California, *The Regional Urban Water Management Plan*, November 2005.
- ⁶ One concern is that the use of recycled water for groundwater recharge could adversely impact groundwater quality due to the introduction of organic contaminants, metals and salts.
- ⁷ Excerpted from the Department of Water Resources Water Plan, Vol2, Ch. 18. 2005.
- ⁸ See www.cuwcc.org for more information about CUWCC and the MOU.
- ⁹ California Department of Water Resources, *Water Plan*. 1998. This estimate includes water used for agriculture.
- ¹⁰ According to the California Department of Water Resources *Management of the California State Water Project*, Bulletin 132-02, p.3, January 2004: "Although initial transportation facilities were essentially completed in 1973, other facilities have since been built, and still others are either under construction or are planned to be build as needed."
- ¹¹ California Department of Water Resources, *Management of the California State Water Project*, Bulletin 132-2, p. xxix. January 2004.
- ¹² In addition to saltwater intrusion from the San Francisco Bay, the Delta is also vulnerable to the collapse of aging levees. In June 2004, for example, a levee in the Jones Tract of the Delta failed, resulting in total inundation of the island and disrupting SWP operation.
- ¹³ For additional information about the CALFED Program, see <http://www.calwater.ca.gov/>.
- ¹⁴ The CRA has an annual capacity of 1.3 maf.
- ¹⁵ <insert endnote>
- ¹⁶ Some urban agencies also have the ability to enter "spot" water markets and to purchase water on an "as needed" basis.
- ¹⁷ Excerpted from Metropolitan Water District of Southern California, *The Regional Urban Water Management Plan*, pp II-21-23. November 2005.
- ¹⁸ Department of Water Resources, *2005 Water Plan Update*, Vol. 1, Table 3-1, p. 3-9.
- ¹⁹ *Ibid.*, Chapter IV. 2005.
- ²⁰ The Salton Sea, the largest inland body of water in California, was formed around 1906 when the Colorado River was accidentally diverted from its natural course. Presently, the Sea is fed by agricultural runoff from the Imperial Valley and Mexico and by the New River and the Alamo River. Without agricultural runoff the Salton Sea would dry up entirely.
- ²¹ The following sections are excerpted from Metropolitan Water District of Southern California, *The Regional Urban Water Management Plan*, Chapter IV. November 2005. 10 According to the California Department of Water Resources *Management of the California State Water Project*, Bulletin 132-02, p.3, January 2004: "Although initial transportation facilities were essentially completed in 1973, other facilities have since been built, and still others are either under construction or are planned to be build as needed."
- ¹¹ California Department of Water Resources, *Management of the California State Water Project*, Bulletin 132-2, p. xxix. January 2004.
- ¹² In addition to saltwater intrusion from the San Francisco Bay, the Delta is also vulnerable to the collapse of aging levees. In June 2004, for example, a levee in the Jones Tract of the Delta failed, resulting in total inundation of the island and disrupting SWP operation.
- ¹³ For additional information about the CALFED Program, see <http://www.calwater.ca.gov/>.
- ¹⁴ The CRA has an annual capacity of 1.3 maf.
- ¹⁵ <insert endnote>
- ¹⁶ Some urban agencies also have the ability to enter "spot" water markets and to purchase water on an "as needed" basis.
- ¹⁷ Excerpted from Metropolitan Water District of Southern California, *The Regional Urban Water Management Plan*, pp II-21-23. November 2005.
- ¹⁸ Department of Water Resources, *2005 Water Plan Update*, Vol. 1, Table 3-1, p. 3-9.
- ¹⁹ *Ibid.*, Chapter IV. 2005.

²⁰ The Salton Sea, the largest inland body of water in California, was formed around 1906 when the Colorado River was accidentally diverted from its natural course. Presently, the Sea is fed by agricultural runoff from the Imperial Valley and Mexico and by the New River and the Alamo River. Without agricultural runoff the Salton Sea would dry up entirely.

²¹ The following sections are excerpted from Metropolitan Water District of Southern California, *The Regional Urban Water Management Plan*, Chapter IV, November 2005.

²² Perchlorate interferes with the thyroid gland's ability to produce hormones required for normal growth and development.

²³ Excerpted from the California Department of Water Resources, *California Water Plan Update 2005*. 2005.---1

²² Perchlorate interferes with the thyroid gland's ability to produce hormones required for normal growth and development.

²³ Excerpted from the California Department of Water Resources, *California Water Plan Update 2005*. 2005.



Energy

THE CHALLENGE

Clean, stable and sustainable sources of energy for Southern California are critical to supporting a healthy and resilient region. In developing future plans, SCAG must fully weigh and consider energy supply, efficiency, consumption, and environmental impacts such as greenhouse gas emissions. California relies on petroleum-based fuels for 96 percent of its transportation needs.¹ The SCAG region consumes over 23 million gallons of petroleum per day, roughly half of California's oil consumption² and vehicle fuel consumption in the region has increased 20 percent over the last ten years.³ Furthermore, only 15 percent of the electricity consumed in the region is generated from renewable sources.⁴ At the same time, SCAG forecasts significant growth in population, households, and jobs that will place new demands on energy production and increase pollution and greenhouse gases.

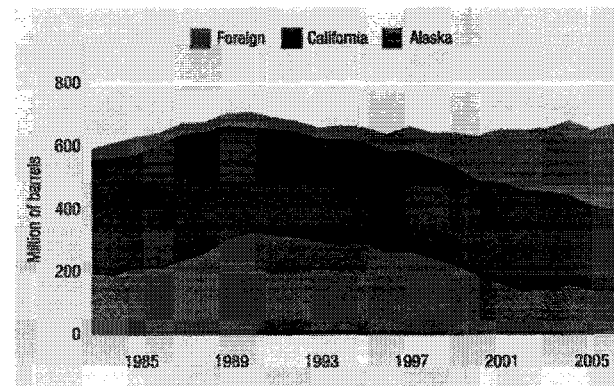
We live in an energy constrained world. Both environmental and geopolitical factors call into question the long term viability of a fossil fuel-based energy future. Concerns about global climate change have motivated action to move away from fossil fuels, while continued oil price fluctuations and supply constraints have helped raise awareness about the unsustainability of our dependence on imported petroleum.

The U.S. represents 5 percent of the world's population, but consumes 25 percent of the world's oil.⁵ In addition, the U.S. Department of Energy forecasts that world energy consumption is projected to increase by 57 percent from 2004 to 2035 and that U.S. consumption of liquid fuels is projected to increase by 30 percent between 2005 and 2030, from 21 million barrels per day to 27 million barrels per day.⁶ Most of the U.S. increase is anticipated in the transportation sector, which is projected to account for 73 percent of total liquid fuels consumption in 2030, up from 67 percent in 2005.⁷

At the same time, U.S. currently imports 58 percent of its petroleum and California imports approximately 40 percent of its petroleum. In California, oil production peaked in 1985. Since then, the share of oil from foreign imports has increased rapidly, from below 10 percent in 1995 to over 45 percent in 2006, as shown in Figure 5.1.⁸ In 2005, California received 35 percent of its foreign imports from Saudi Arabia, 24 percent from Ecuador, and 12 percent from Iraq.⁹ Globally, increasing demand from the large growth in the economies of India and China will further tighten world oil supplies. According to the U.S. Energy Information Agency, India has become the fifth largest consumer of oil in the world during 2006.¹⁰ China is



FIGURE 5.1
Figure Title



Source

the world's most populous country and the second largest energy consumer behind the United States.¹¹

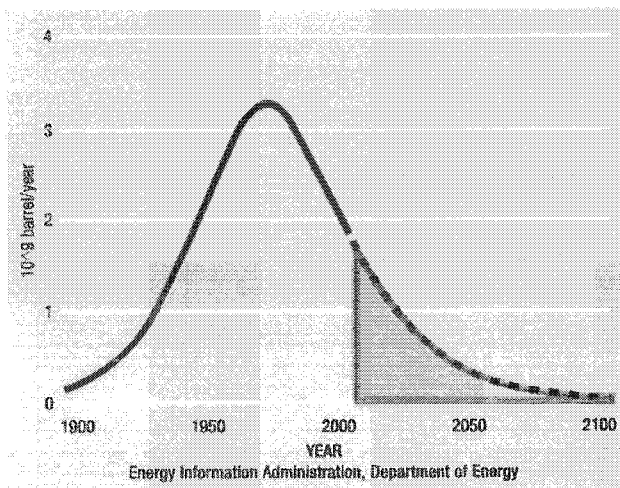
There are additional concerns that the nation's dependence on oil, especially from the Persian Gulf, requires a U.S. military presence, with all of its associated economic and social costs.¹² Oil production could be shut down by wars, strikes, and other political events in many countries with proven oil reserves. For example, the countries of Iran, Iraq, Nigeria and Venezuela contain one-third of worldwide reserves but face high levels of political risk. Furthermore, countries defined as having medium to high levels of political risk held 63 percent of proven worldwide oil reserves.¹³

Furthermore, much of the oil remaining in the ground can only be accessed by using complex and costly technologies that present greater environmental challenges than previous technologies used for most of the oil produced to date. Enhanced oil recovery technologies are much costlier than conventional production methods and increase greenhouse gas emissions due to the additional energy required to perform the tasks.

Oil is a finite and non-renewable resource and it is uncertain how future energy consumption trends will be sustained with the current political, environmental and technological constraints. Our nation's reliance on petroleum for our energy needs is even more problematic because of the global trend toward an inevitable turning point: - "peak oil" - the peak and then decline of global oil production. Peak oil is the point of maximum oil production whether from a single well, a country, or the planet as a whole. The maximum point of production is expected to happen when about half or slightly more of the ultimately recoverable oil has been produced. To be clear, peaking does not mean "running out." Rather, it indicates the point where global production can no longer be maintained or increased. Production will begin to decline, year after year. Geophysicist M. King Hubbert correctly predicted the 1971 peak in U.S. oil production as shown in Figure 5.2 and further predicted that sometime between 2005 and 2025, world oil production would reach a peak and begin a sharp decline.¹⁴

A fundamental problem in predicting oil peaking is the poor quality of and possible political biases in world oil reserves

FIGURE 5.2
Figure Title



Source

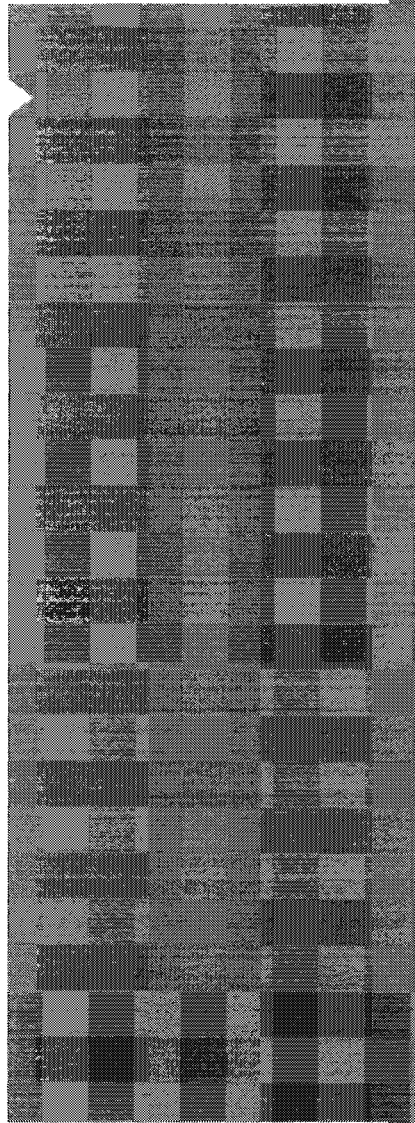
data. The recent range of estimates varies from late 2005 to a belief that it will never happen. For example, the International Energy Agency reported in July 2007 that the world will face an oil supply “crunch” in the next five years.¹⁵ Most estimates are based on different geological assumptions and investments in expanded oil production. This wide range of peak oil forecasts presents a very difficult dilemma for policy makers. On one hand, action could be delayed until there is a consensus from scientists; however that is unlikely given the strongly held divergent views. On the other hand, waiting to take action could prove costly and result in severe consequences. Initiating a move toward conservation, efficiency, demand reduction and

renewables 20 years before peaking would offer the possibility of avoiding a world liquid fuels shortfall and significant economic hardship.¹⁶

The world supply crunch will impact the SCAG region. A fuel shortage will take a toll on California’s economy as consumers are spending more of their household income on gasoline than ever before, particularly with development patterns that create long commutes without access to public transportation. High fuel prices also reduce profit margins for the manufacturing and industrial sectors, which pass the higher cost of their goods and services to consumers. Since September of 2004, the monthly average price of gasoline has increased by more than 35 cents per gallon, costing consumers an additional \$6.1 billion for gasoline.¹⁷

There is also a tightening of natural gas markets due to decreasing supplies and growing demand for natural gas, which makes up 25 percent of the nation’s energy use and is by comparison, a relatively clean source of electricity compared to sources such as coal. The U.S. and California will lose a major source of natural gas imports by 2010 due to the decline of Canada’s largest producing basin, the Western Sedimentary Basin, coupled with an approximately 2 percent projected average annual growth in Canada’s domestic consumption.¹⁸ Although some research has shown a world peak in natural gas occurring a decade after oil, the U.S. and California could experience the effects sooner. For example, natural gas has become the preferred source of electricity generation, supply-





ing over 40 percent of California's power.¹⁹ Also, unlike oil, it is more difficult and expensive to import replacement natural gas from overseas – as it has to be liquefied for transport and then re-gasified for distribution.²⁰ An increase in natural gas prices would negatively affect the economy, potentially leading to reduced sales and employment.²¹

In addition to the uncertainty regarding fossil fuels supplies, there is also uncertainty about how climate change will alter economies and ecosystems at the global, regional and local levels. Transportation is the largest source of greenhouse gas emissions in California, representing 41 percent of emissions. California is the second largest emitter of GHG emissions in the United States, next to Texas. Only nine nations have greater total emissions than the state of California. In 2004, California produced 492 million gross metric tons of carbon dioxide – equivalent GHG emissions, including imported electricity and excluding combustion of international fuels and carbon sinks or storage.²² Climate change poses serious risks to our economy, water supply, biodiversity, and public health. These potentially catastrophic impacts have led to new local and state efforts to reduce the amount of greenhouse gas emissions released into the atmosphere. The landmark legislation, AB 32 or the Global Warming Solutions Act, requires reduction of the state's greenhouse gas (GHG) emissions to 1990 levels by 2020. This emissions target is equal to a 25% reduction from current levels. Longer term targets have also been set through Executive Order S-3-05, which calls for a reduction of GHG emissions to 80% below 1990 levels by 2050.

The demand for oil must decline at a similar rate of production in order to avert economic and social consequences of increased prices. If oil and gas become scarce and expensive, it will have profound implications for our economy and way of life.²³ A recent study funded by the U.S. Department of Energy determined that viable mitigation options exist but must be initiated more than a decade in advance to avoid severe economic disruptions.²⁴

THE PLAN

The RCP lays out a strategy to reverse the current trends and diversify our energy supplies to create clean, stable, and sustainable sources of energy that address energy uncertainty and environmental health. This plan includes strategies that the region can take to reduce fossil fuel consumption and increase the use of clean, renewable technologies. SCAG will continue to work with stakeholders at the federal, state, regional and local levels to promote these policies and encourage their implementation. However, leadership is needed to coordinate and provide an ongoing forum for local and regional programs to implement an energy savings program.

As stated in the 2006 *State of the Region*, we can prepare for these inevitable energy challenges by encouraging community participation, reinvesting in public transportation, and revising land use, zoning and building codes to optimize the consumption of our energy resources. There are numerous strategies that the public sector can undertake to address our energy

challenges. These make up the bulk of the proposed Action Plan to promote a more sustainable energy supply.

Land Use and Building Design

Strategies to reduce energy consumption include both where development occurs and how it is designed. Land use patterns have shaped energy use by increasing the amount of travel necessary to reach jobs and services. This growth pattern has resulted in an increase in vehicle miles traveled (VMT) at a rate of more than 3 percent a year between 1975 and 2004.²⁵ Increased VMT results in additional demand for petroleum and greenhouse gas emissions. As such, transportation accounts for 41 percent of the state's greenhouse gas emissions. Building design and housing types also have a strong relationship to energy use and are thus, a strong focus of this chapter. For example, residents of single family detached housing have been found to consume 22 percent more energy than those of multifamily housing and 9 percent more than those of single-family attached housing.²⁶ SCAG has commissioned research to identify effective strategies to reduce energy use, with an emphasis on land use. The discussion that follows is a summary of the findings.

Mixed land use (i.e., residential developments near work places, restaurants, and shopping centers) with access to public transportation has been shown to save consumers up to 512 gallons of gasoline per year. It is estimated that households in transit-oriented developments drive 45 percent less than resi-

dents in auto-dependent neighborhoods.²⁷ With this reduction, there is less overall energy consumption and less greenhouse gas emissions from personal vehicles. Going hand-in-hand with mixed-use development, is the development of pedestrian corridors and bike trails that connect residents to work sites, shops, and recreational opportunities, which can also realize a reduction of personal vehicle use and fuel consumption.

Neighborhood energy systems allow communities to generate their own electricity and offer potential advantages such as cost reductions and energy savings up to 40 percent. Micro-grids are a subset of community-based distributed generation (DG) or combined heating and power (CHP) systems that focus on power quality and reliability. Micro-grids are used in communities (often industrial parks) that require higher electric reliability and higher power quality than can be provided by the electric utility. Rather than invest in systems for individual buildings or businesses, the community pools resources and shares the benefits of the community-based system. Generally, micro-grids include DG and power conditioning, but may also include energy storage, CHP, and/or renewables.

Orienting streets and buildings for best solar access could significantly reduce energy requirements throughout the life of a building. Streets should be designed to take advantage of passive solar heating and most buildings should be oriented such that the long axis runs east/west. The southern most face of the building should face within 30 degrees of south (See Figure 5.3). Also, strategically planting trees on a residential

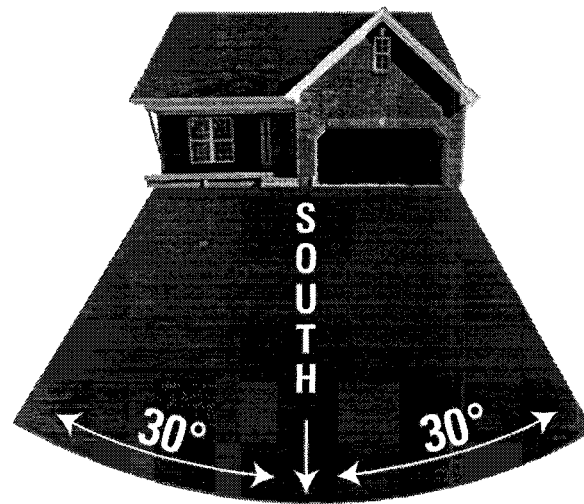


The use of electricity as a transportation fuel for transit, automobiles and goods movement reduces air emissions. ARB has estimated that electric vehicles produce only about 6 percent of the air pollution of the cleanest new internal combustion cars available today. The number of electric transportation and goods movement technologies is expected to triple by 2020 to between 900,000 and 1 million units due to known regulatory requirements and financial incentive programs that encourage the use of electric technologies because of their inherent emissions benefits.³¹

property can reduce attic temperatures up to 20 degrees Fahrenheit and wall temperatures up to 15 degrees Fahrenheit on a sunny summer day as well as reduce air conditioning costs up to 20 percent. The trees absorb numerous pollutants (dust, ash, pollen, smoke), remove carbon from carbon dioxide (CO₂) and release oxygen. They also trap and hold up to 50 gallons of water (each) reducing storm water runoff, increasing water filtration in the ground, reducing soil erosion, and requiring minimal watering when mature. Total present value benefits, including energy, environmental and aesthetics are estimated at \$1,399,776,270 or roughly \$699.89 per tree.²⁸

Green buildings can significantly reduce local environmental impacts, regional air pollutant emissions and global greenhouse

FIGURE 5.4
Figure Title



gas emissions. Green building standards involve everything from energy efficiency, usage of renewable resources and reduced waste generation and water usage. For example, water-related energy use consumes 19 percent of the state's electricity. Furthermore, the residential sector accounts for 48 percent of both the electricity and natural gas consumption associated with urban water use.²⁹ While interest in green buildings has been growing for some time, cost has been a main consideration as it may cost more up front to provide energy-efficient building components and systems. Initial costs can be a hurdle even when the installed systems will save money over the life of the building. Energy efficiency measures can reduce initial costs, for example, by reducing the need for over-sized air conditioners to keep buildings comfortable. Undertaking a more comprehensive design approach to building sustainability can also save initial costs through reuse of building materials and other means.

A comprehensive and persuasive study of the value of green building savings is the 2003 report to California's Sustainable Building Task Force. In the words of the report:

"While the environmental and human health benefits of green building have been widely recognized, this comprehensive report confirms that minimal increases in upfront costs of about 2% to support green design would, on average, result in life cycle savings of 20% of total construction costs — more than ten times the initial investment. For example, an initial upfront investment of up to \$100,000 to incorporate green building

features into a \$5 million project would result in a savings of \$1 million in today's dollars over the life of the building."³⁰

Alternative Fuels

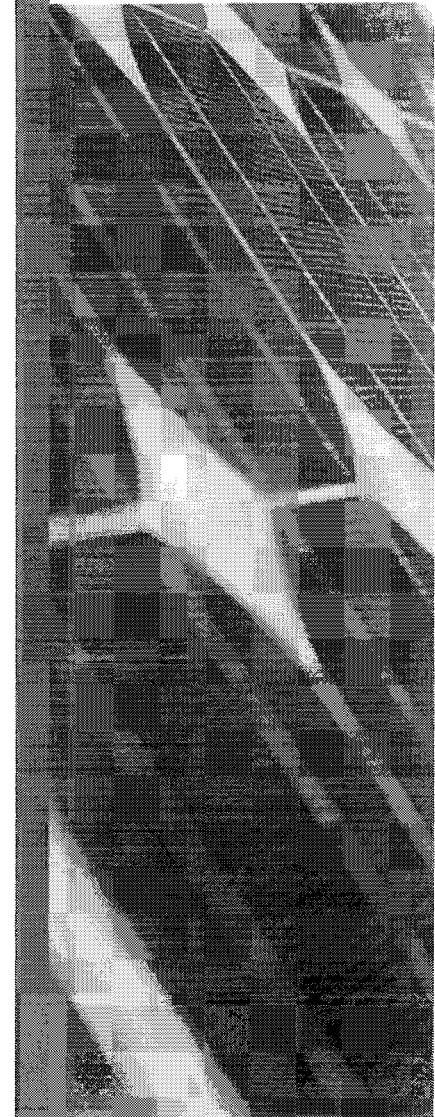
Alternatives to petroleum and infrastructure will be needed for the SCAG region to achieve the ambitious performance outcome of reducing fossil fuel use 25% below 1990 levels by 2020. California's leadership on research and development of alternative transportation fuels will help the SCAG region meet these goals. For example, Assembly Bill 1007 provides a comprehensive framework to examine broad transportation fuel issues and effectively integrate transportation energy and air quality policies. The California Energy Commission (CEC) and California Air Resources Board (ARB) also are analyzing numerous options to reduce the use of conventional transportation, which will assist the SCAG region as it grapples with our transportation energy future.

Each alternative fuel has costs, benefits and performance characteristics that will define its effectiveness as a replacement to petroleum. For example, the CEC's 2005 Integrated Energy Policy Report offers a glimpse into the challenges ahead for replacing fossil fuels with alternatives. For example, an increase in the amount of ethanol in gasoline would result in a loss of fuel economy and require motorists to purchase more gasoline since E-85 contains almost 30 percent less energy than gasoline.³² These energy challenges will force the region to become more energy efficient through technology enhancements, pricing

mechanisms, and integrating land use and transportation decisions.

Renewable Energy

Additional efforts will be needed to reach SCAG's performance outcome of 20% renewable energy supply by 2010 and its longer term goal of 30% by 2020.³³ Of the electricity consumed in the SCAG region in 2006, an average of 7 percent was generated from eligible renewables. By comparison, 10 percent of the electricity produced in California was renewable.³⁴ The CEC recommends various opportunities to expand the renewable energy mix such as adopting clear and consistent policies for sustainable biomass development, taking advantage of California's abundant solar energy resources, and tapping into distributed generation and combined heat and power facilities. California has the potential to produce ethanol from cellulosic biomass material such as municipal, agricultural, and forestry wastes. Solar offers a clean, renewable and reliable energy sources. The California Solar Initiative offers incentives and funding for solar installations in an effort to create 3,000 megawatts of new solar-produced electricity by 2017. Distributed generation also offers an option to central station fossil-fueled generation since it is produced on site and connected to a utility's distribution system. The most efficient and cost-effective form of distributed generation is cogeneration or combined heat and power, which recycles waste heat. These technologies help customers become energy independent and protect them from supply outages and brownouts. SCAG will continue to



monitor the development of these renewable resource opportunities as well as track their costs and benefits.

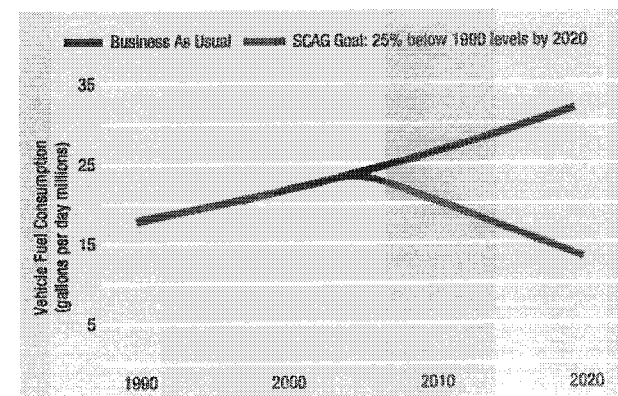
Public Transportation

As identified in the 2006 *State of the Region*, total transit boardings in the region in fiscal year 2005 increased by 16 percent from 617 million to a record high of 672 million. Nationally, transit boardings also increased at a faster rate than the population. This shift is good news since increases in public transit ridership can proportionately reduce VMT, congestion, fuel consumption and improve air quality. A recent study on public transportation found that current public transit use reduces U.S. gasoline consumption by 1.4 billion gallons each year. In a "growth scenario," the study assumed that ridership would double over current levels due to expanded transit systems, new routes, and improved land use patterns. It concluded that the total national fuel savings from public transportation would double from current savings and would equal 2.8 billion gallons per year.³⁵ SCAG has the opportunity to influence future fuel demand by increased funding of public transportation in the Regional Transportation Plan (RTP), which integrates the transportation plans of all of the cities and counties within the region. By prioritizing funding priorities for energy efficient transportation projects, the region can begin to reduce petroleum demand and increase air quality.

Reversing the Trend

Leadership is needed to coordinate and provide an ongoing forum for local and regional programs to address our energy challenges and reverse our unsustainable dependence on fossil fuels. As shown in the graphic below, SCAG can lead the way by establishing actions that the region can take to reduce fossil fuel consumption and increase the use of clean, renewable

FIGURE 5.4
Figure Title



Source

technologies. SCAG will continue to work with stakeholders at the federal, state, regional and local levels to promote these policies and encourage their implementation. The remainder of this chapter will identify how to reverse the current trends and become less dependent on fossil fuels.

ENERGY GOALS

- Reduce our region's consumption of non-renewable energy by:
 - Supplying the energy needs of the region today in a way that reduces the negative environmental impacts, social inequities, and economic hardship on future generations;
 - Developing the infrastructure and social capital to adapt to a future energy economy with a constrained supply.
- Increase the share of renewable energy in the region by:
 - Ensuring the resiliency of the region's economy by encouraging and supporting renewable energy infrastructure; and
 - Developing renewable energy sources that reduce the amount of air emissions emitted through the combustion of fossil fuels

ENERGY OUTCOMES

- Decrease the region's consumption of fossil fuels 25% from 1990 levels by 2020.
- Increase the share of renewable energy generation in the region to 20% by 2010, with additional increases to reach 30% by 2020.

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REGIONAL COMPREHENSIVE PLAN



ENERGY

ENERGY ACTION PLAN

Key Best Practices	Legislation	Coordination	Constrained Policies	Potential for Direct/Indirect Benefits												Other Benefits
				Land Use	Transportation	Air Quality	Water	Energy	Open Space	Economy	Security	Solid Waste	Public Health	Climate Change		
SCAG Policies (SCAG policies shall be subject to consideration for future Overall Work Plans)																
		X	EN-1. SCAG shall continue to work with the State to develop approaches for evaluating environmental impacts within the Compass Blueprint program, particularly energy, air quality, water, and open space and habitat. ¹	X	X	X	X	X	X	X				X	X	
X			EN-2. SCAG shall continue to develop energy efficiency and green building guidance to provide direction on specific approaches and models and to specify levels of performance for regionally significant projects to be consistent with regional plans.	X	X	X	X	X	X	X		X		X	X	
		X	EN-3. SCAG shall continue to pursue partnerships with Southern California Edison, municipal utilities, and the California Public Utilities Commission to promote energy efficiency and reduce greenhouse gas emissions in the region.			X		X		X				X	X	
		X	EN-4. SCAG shall continue to convene key decision makers to discuss energy issues and make recommendations to SCAG's Energy and Environment Committee, where appropriate.	X	X	X		X				X		X	X	
		X	EN-5. SCAG shall convene key stakeholders to evaluate and where feasible, recommend transportation measures such as congestion pricing, a transitional regional goods movement system and an environmental mitigation strategy that reduces fossil fuel consumption and uses non fuel combustion technologies.	X	X	X		X		X					X	
		X	EN-6. SCAG shall monitor and provide input towards development of state energy projections and tools, including the Integrated Energy Policy Report and similar policy documents as well as future efforts to determine the implications of energy generation and consumption for the built environment.	X	X	X		X						X	X	
	X		EN-7. SCAG shall encourage credits for clean post recycle conversion technologies to produce energy or for technologies that offset energy use or emissions.		X	X		X		X		X		X	X	
Local Government Policies																
X			EN-8. Developers should incorporate and local governments should include the following land use principles that use resources efficiently, eliminate pollution and significantly reduce waste into their projects, zoning codes and other implementation mechanisms: • Mixed-use residential and commercial development that is connected with public transportation and utilizes existing infrastructure. • Land use and planning strategies to increase biking and walking trips. ⁱⁱ	X	X	X	X	X	X	X		X		X	X	

ID/Best Practices	Legislation	Coordination	Constrained Policies	Potential for Direct/Indirect Benefits								Other Benefits		
				Land Use	Transportation	Air Quality	Water	Energy	Open Space	Economy	Security	Solid Waste	Public Health	Climate Change
X			EN-9. Developers and local governments should integrate green building measures into project design and zoning such as those identified in the U.S. Green Building Council's Leadership in Energy and Environmental Design, Energy Star Homes, Green Point Rated Homes, and the California Green Builder Program. Energy saving measures that should be explored for new and remodeled buildings include: <ul style="list-style-type: none">• Using energy efficient materials in building design, construction, rehabilitation, and retrofit• Encouraging new development to exceed Title 24 energy efficiency requirements.• Developing Cool Communities measures including tree planting and light-colored roofs. These measures focus on reducing ambient heat, which reduces energy consumption related to air conditioning and other cooling equipment.• Utilizing efficient commercial/residential space and water heaters: This could include the advertisement of existing and/or development of additional incentives for energy efficient appliance purchases to reduce excess energy use and save money. Federal tax incentives are provided online at http://www.energystar.gov/index.cfm?c=Products.pr_tax_credits.• Encouraging landscaping that requires no additional irrigation: utilizing native, drought tolerant plants can reduce water usage up to 60 percent compared to traditional lawns.• Encouraging combined heating and cooling (CHP), also known as cogeneration, in all buildings.• Encouraging neighborhood energy systems, which allow communities to generate their own electricity• Orienting streets and buildings for best solar access.• Encouraging buildings to obtain at least 20% of their electric load from renewable energy.ⁱⁱⁱ	X	X	X	X	X	X	X		X	X	X
X			EN-10. Local governments should include energy analyses in environmental documentation and general plans with the goal of conserving energy through the wise and efficient use of energy. For any identified energy impacts, appropriate mitigation measures should be developed and monitored. SCAG recommends the use of Appendix F, Energy Conservation, of the California Environmental Quality Act.	X	X	X		X		X			X	X

ICB/Bus/Preselec	Legislation	Consolidation	Constrained Policies	Potential for Direct/Indirect Benefits										Other Benefits	
				Land Use	Transportation	Air Quality	Water	Energy	Open Space	Economy	Security	Solid Waste	Public Health	Climate Change	
X			EN-11. Local governments should consider various best practices and technological improvements that can reduce the consumption of fossil fuels such as: <ul style="list-style-type: none"> • SCAG shall encourage investment in transit, including electrified light rail • Expanding light-duty vehicle retirement programs • Increasing commercial vehicle fleet modernization • Implementing driver training module on fuel consumption • Replacing gasoline powered mowers with electric mowers • Reducing idling from construction equipment • Incentivizing alternative fuel vehicles and equipment • Developing infrastructure for alternative fueled vehicles • Increasing use and mileage of High Occupancy Vehicle (HOV), High Occupancy Toll (HOT) and dedicated Bus Rapid Transit (BRT) lanes • Implementing truck idling rule, devices, and truck-stop electrification • Requiring electric truck refrigerator units • Reducing locomotives fuel use • Modernizing older off-road engines and equipment • Implementing cold ironing at ports • Encouraging freight mode shift • Limit use and develop fleet rules for construction equipment • Requiring zero-emission forklifts • Developing landside port strategy: alternative fuels, clean engines, electrification 		X	X		X		X				X	X
X			EN-12. Developers and local governments should submit projected electricity and natural gas demand calculations to the local electricity or natural gas provider, for any project anticipated to require substantial utility consumption. Any infrastructure improvements necessary for project construction shall be completed according to the specifications of the energy provider.	X		X		X							X
X			EN-13. Developers and local governments should encourage that new buildings are able to incorporate solar panels in roofing and tap other renewable energy sources to offset new demand on conventional power sources.	X		X		X		X					X
X			EN-14. Local governments should support only the use of the best available technology including monitoring, air, and water impacts for locating any nuclear waste facility.			X	X	X			X		X		
X			EN-15. Developers and local governments should explore programs to reduce single occupancy vehicle trips such as telecommuting, ridesharing, alternative work schedules, and parking cash-outs.		X	X		X		X					X
X			EN-16. Utilities and local governments should consider the most cost-effective alternative and renewable energy generation facilities.	X		X		X		X		X	X	X	X

Policy Title	Policy Number	Policy Description	Potential for Direct/Indirect Benefits										Other Benefits	
			Land Use	Transportation	Air Quality	Water	Energy	Open Space	Economy	Security	Solid Waste	Public Health	Climate Change	
X		EN-17. The project implementation agency should consider increasing capacity of existing transmission lines, where feasible.	X		X		X	X			X	X		
X		EN-18. The project implementation agency should install and maintain California Best Available Control Technologies on all power plants at the US-Mexico border.			X	X	X					X	X	
	X	EN-19. Subregional and local governments should explore participation in energy efficiency programs provided by their local utility such as the Ventura Regional Energy Office, South Bay Energy Savings Center, and the San Gabriel Valley Energy Wise program. These programs can offer customized incentives and public awareness campaigns to reduce energy consumption.			X		X		X				X	

ENERGY

Initiative	Legislation	Coordination	Strategic Initiatives	Potential for Direct/Indirect Benefits										Other Benefits	
				Land Use	Transportation	Air Quality	Water	Energy	Open Space	Economy	Security	Solid Waste	Public Health	Climate Change	
SCAG Initiatives (SCAG initiatives shall be subject to consideration for future Overall Work Plans)															
		X	ENSI-1: SCAG shall consider energy uncertainty into its future planning and programming, including the Regional Transportation Plan and the Regional Transportation Improvement Program.	X	X	X		X		X	X		X	X	
		X	ENSI-2: SCAG shall continue to develop, in coordination with the California Air Resources Board, a data and information collection and analysis system that provides an understanding of the energy demand and greenhouse gas emissions in the SCAG Region.	X	X	X	X	X					X	X	
Federal and State Government Strategies															
	X		ENSI-3: The Secretary of Energy, in coordination with other relevant federal agencies, should establish a peak oil strategy to better prepare the United States for a peak and decline in oil production. Such a strategy should include efforts to reduce uncertainty about the timing of a peak in oil production and provide timely advice to Congress about cost-effective measures to mitigate the potential consequences of a peak.		X	X		X		X	X	X	X	X	
	X		ENSI-4: The Federal Government should increase Corporate Average Fuel Economy (CAFE) to a level that will reduce our dependence on foreign oil and reduce greenhouse gas emissions.	X	X	X		X		X	X	X	X	X	
	X		ENSI-5: The Federal Government should develop a national consensus on alternative fuel research and development.		X	X		X		X	X	X	X	X	
	X		ENSI-6: As recommended by the California Energy Commission, the state should continue to fund the Blueprint Planning Grant program and Blueprint Learning Network to assist regional agencies and local governments in developing regional growth plans. The grant program should include energy consumption and greenhouse gas emission reduction as primary outcomes of the blueprints developed within the program. Technical and funding assistance for local governments should be included in this.	X	X	X		X		X			X	X	
	X		ENSI-7: The Federal and State Government should promote clean, cost-effective, reliable, domestic renewable energy generation, such as solar power and wind turbines.		X	X		X		X	X		X	X	
	X		ENSI-8: State and federal lawmakers and regulatory agencies should pursue the design of programs to either require or incentivize the expanded availability and use of alternative-fuel vehicles to reduce the impact of shifts in petroleum fuel supply and price.		X	X		X		X	X		X	X	
	X		ENSI-9: The State and Federal governments should encourage mileage-based vehicle insurance as a voluntary program.		X	X		X		X					
Local Government Strategies															
X			ENSI-10: Local governments should alter zoning to improve jobs/housing balance and creating communities where people live closer to work, bike, walk, and take transit as a substitute for personal auto travel. ^{iv}	X	X	X		X	X	X			X	X	

Resources

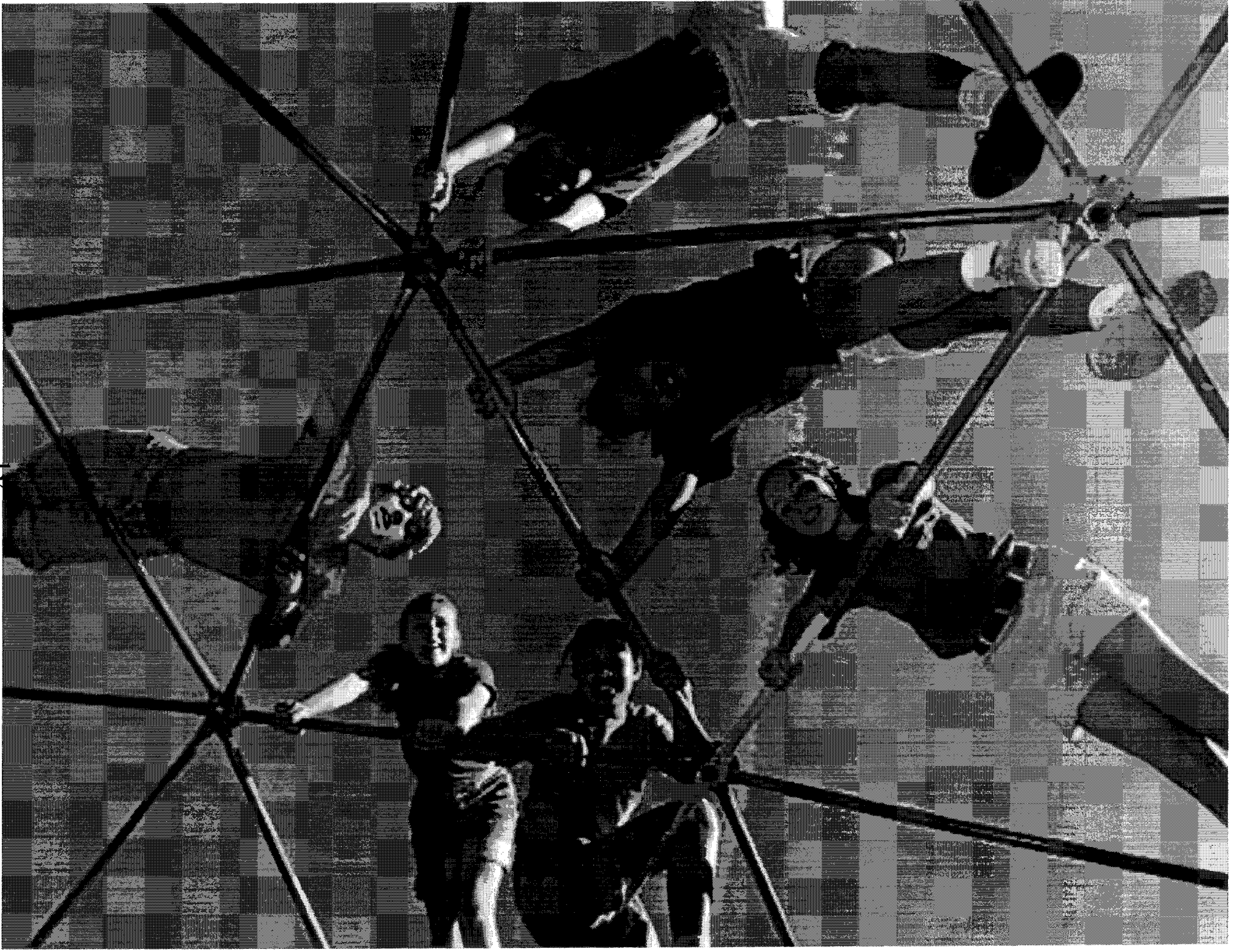
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- Southern California Edison, Energy Efficiency Incentives: <http://www.sce.com/RebatesandSavings>
- Southern California Gas Company, Energy Efficiency Incentives: <http://www.socalgas.com/energyefficiency/>
- Federal Tax Incentives for Energy Efficiency: <http://www.energystar.gov/>

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DRAFT
2008
REGIONAL COMPREHENSIVE PLAN



Air Quality

THE CHALLENGE

Since the U.S. Environmental Protection Agency (EPA) developed regulations targeting six “criteria” pollutants that adversely affect human health and welfare, federal, state, and regional regulations have reduced hundreds of tons of air pollution each day in Southern California. Smog alerts are largely a thing of the past, as smog levels have dropped over 75 percent in the past twenty years.

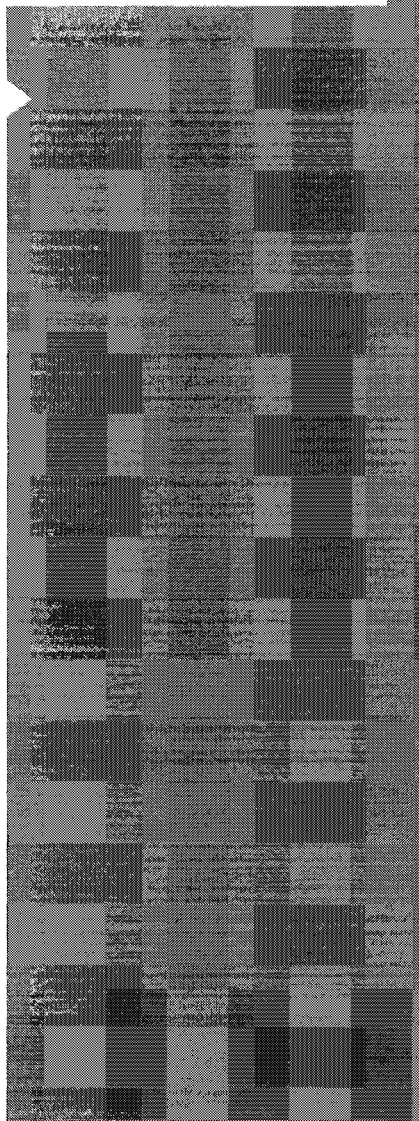
Despite this progress, air pollution continually plagues Southern California. Much of the region continues to exceed National Ambient Air Quality Standards (NAAQS). The South Coast Air Basin (SCAB), one of the four basins in the SCAG region, still has the worst air quality in the nation. The American Lung Association reported that, in 2007, the Los Angeles-Long Beach-Riverside region ranked number one as the most polluted area in the United States.¹

The pollutants that pose the greatest health concern in the SCAG region are ground-level ozone (O₃) and particulate matter (PM). Ground-level ozone, a component of urban and regional smog, is a colorless and poisonous gas that forms in the atmosphere through complex reactions between chemicals directly emitted from motor vehicles, industrial plants, con-

sumer products and many other sources. Repeated short-term exposure to ozone can damage the respiratory tract, causing inflammation and irritation, and induces symptom, such as coughing, chest tightness, shortness of breath, and worsening of asthma symptoms.² In recent years, population-based studies have revealed a strong correlation between elevated ambient ozone levels and increases in daily hospital admission rates, as well as mortality.³ In addition, ozone causes substantial damage to crops, forests and native plants. Major technological or political breakthroughs that identify new ways to achieve the federal 8-hour ozone standard by 2024 are imperative. However, this is not an easy task. Our region needs to reduce 500 tons per day of ozone-forming pollution, largely from cars, buses, trucks, and other “mobile sources.” Based on current technology, over 40 percent of the solution relies on new ideas that are expected soon (known as the “black box”), but difficult to define.⁴

One of the most dangerous pollutants is particulate matter. Particulate matter is a complex mixture that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. Of particular concern are fine particulates, or PM_{2.5}, which are smaller than 2.5 microns in diameter. Our residents make up over 50 percent of the population in the





nation that is exposed to $PM_{2.5}$ concentrations above the federal standard. $PM_{2.5}$ are produced any time fuels, such as coal, oil, diesel or wood, are burned. $PM_{2.5}$ comes from fuel used in everything from power plants to wood stoves and motor vehicles (e.g., cars, trucks, buses and marine engines). These particulates are even produced by construction equipment, agricultural burning, and forest fires. $PM_{2.5}$ is small enough to penetrate our lungs so deeply that they cannot be expelled by the body. Today, they contribute to over 5,400 premature deaths annually and lead to nearly one million lost work days in the South Coast Air Basin. Further, our residents make up over 50% of the population in the nation that is exposed to $PM_{2.5}$ concentrations above the federal standard. These and even smaller “ultrafine” particulates are fast becoming a major health concern that must be addressed soon. The 2007 Air Quality Management Plan (AQMP) for the South Coast Air Basin predicts a shortfall of over 70 tons per day of NO_x reductions to meet the federal $PM_{2.5}$ standard by the 2015 federal deadline.

Perhaps the most publicized air quality problem today is the phenomenon of global climate change. According to the U.S. EPA, the transportation sector directly accounted for approximately 27% of total U.S. greenhouse gas emissions in 2003.⁵ Our planet has reached the highest emissions levels of carbon-based CO_2 , the most prevalent greenhouse gas, in recorded history (see Figure 6.1). This unprecedented trend is increasing average global temperatures at alarming rates. A warmer climate would substantially complicate our efforts to

fight our historical ozone problems. Further, the impacts of climate change are even more profound, as water supplies, flora and fauna, and nearly every aspect of life as we know it could be adversely affected by a warmer world.

Mobile source emissions, both on-road (e.g. cars, trucks, buses, etc.) and off-road sources (e.g. boats, off-road recreational vehicles, aircraft, trains, ships, industrial and construction equipment, farm equipment, etc.), are the primary culprits contributing to the region’s air quality challenges and global climate change. Driving a motor vehicle is the single most polluting thing that most of us do.⁶ The 2007 AQMP reports that there are approximately 12 million vehicles in the South Coast Basin. In 2002, these vehicles traveled more than 349 million miles per day; they are projected to travel about 407 million miles per day by the year 2020. Motor vehicles emit millions of tons of pollutants into the air each year. Mobile sources account for about 60 percent of all ozone forming emissions and for over 90 percent of all carbon monoxide (CO) emissions from all sources.⁷ CARB considers diesel PM to be a potent global warming agent, as it has been responsible for more than half of black carbon emissions in the U.S. and about 30 percent globally. Diesel engine emissions are responsible for a majority of California’s estimated cancer risk attributable to air pollution.⁸

Policy makers and regulatory agencies, alike, have begun to realize the immense air quality challenges the region faces. Recognizing the need for immediate action, on May 2007,

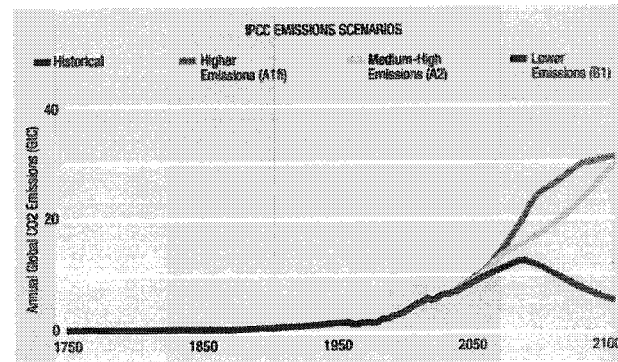
SCAG's Regional Council, which is comprised of elected officials throughout region, adopted a resolution urging the federal and state governments to take emergency responses in the face of an air quality health crisis. The call to action was in response to the fact that: 1) the residents of the South Coast Air Basin experience over 5,000 premature deaths annually due to exposure to $PM_{2.5}$, 2) the residents of the South Coast Air Basin comprise over 50% of the population in the nation that is exposed to $PM_{2.5}$ concentrations above the federal standard; 3) the Draft 2007 AQMP for the South Coast Air Basin identified a shortfall of over 70 tons per day of NO_x reductions to meet the federal $PM_{2.5}$ standard by the 2015 CAA deadline; and 4) a substantial portion of the emissions come from federal and state sources.

Given the challenges that lie ahead, increased public awareness and a reinvigorated collaborative effort from all agencies and stakeholders is critical to bring this Region into attainment with the federal air quality standards. SCAG's contribution to this collaborative effort is essential, as emissions reductions have become front and center of the air quality challenge.

The Growth Conundrum

Although regulations and technological breakthroughs have generally improved air quality, our unabated population growth threatens to overwhelm these gains in the future.

FIGURE 6.1
Figure Title

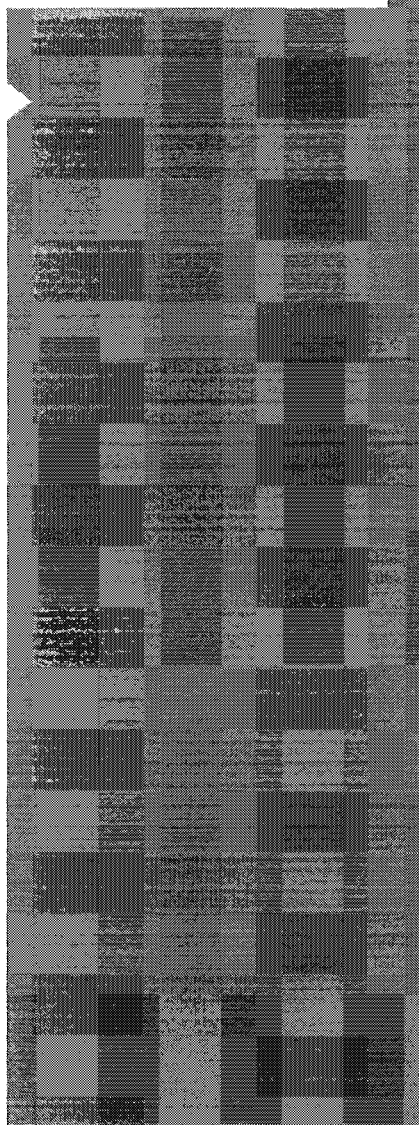


Source

The SCAG region is the largest metropolitan planning area in the United States, encompassing 38,000 square miles and has one of the largest concentrations of population, employment, income, business, industry and finance in the world. Our region faces an exponentially growing population coupled by significant economic growth. Forecasts reveal that the region's population is projected to increase by almost 5.8 million people (32%), from 2003 to 2035, employment by 2.5 million jobs (32%), and the number of households by 2.0 million (35%).⁹

These glimpses of our future underscore a key challenge for the region: How do we make historic reductions in air pollution in the face of continued population growth, sprawling urbanization, increasing vehicle miles traveled, and an expanding economy? Accommodating anticipated growth in the SCAG region in a sustainable way—by taking account of ecological,





economic and social factors, while enhancing quality-of-life indicators for future generations—represents a central challenge facing Southern California.

The Growth in Goods Movement

Southern California faces both an extraordinary economic opportunity and a frustrating policy dilemma. Goods movement in the SCAG region is supported, in part, by its geographical advantage such as deep-water marine ports and highly developed network of highways and railways, availability of trans-loading facilities and its large internal market. The region is a major gateway for both international and domestic commerce, and goods movement is the fastest growing segment of the region's transportation sector. Additionally, goods movement plays a vital role in the national, state, and regional economies with one out of every seven jobs in Southern California depending on trade.

The increasing volume of goods moving in and through the SCAG region is straining our infrastructure and exacerbating air quality challenges in three key ways. First, the sheer growth in freight movement could jeopardize current attainment plans for ozone and $PM_{2.5}$. Second, freight-related diesel particulates create toxic air contaminant hotspots that threaten local air quality near the ports and truck distribution routes. Finally, there are institutional challenges, as goods movement is generally regulated by the federal government. The projected growth in truck volumes and increase demand on the existing railroad

capacity will bring with it associated concerns of automobile traffic delays, and safety concerns; thus, compromising the quality of life, health and safety of the residents and communities in the region.

THE PLAN

The RCP neither replaces nor modifies the air plans adopted within the region, but rather, it sets the policy context in which SCAG participates in and responds to these plans. The RCP builds off the Air Quality Management Plan (AQMP) process that is designed to meet federal and State health-based criteria pollutant standards. First, it complements the AQMP by providing guidance and incentives for public agencies to adopt best practices that support the technology-based control measures in the AQMP. For example, the RCP's energy policies will help accelerate turnover of older, more polluting combustion engines that support the AQMP's control measures.

Second, the RCP emphasizes the need for local initiatives that can reduce the region's greenhouse gas emissions that contribute to climate change, an issue that is largely outside the focus of the AQMP. Policies such as green building that reduce our "carbon footprint" can have direct impacts on energy, water supply, and other resource areas.

Third, the RCP emphasizes the need for better coordination of land use and transportation planning, which heavily influences the emissions inventory from the transportation sectors of

the economy. This also includes minimizes land use conflicts, such as encouraging residential development near freeways, industrial areas, or other sources of air pollution.

The RCP calls on SCAG and local governments throughout the region to implement policies that complement the AQMP in the following ways:

- **SCAG:** As the Metropolitan Planning Organization for Southern California, SCAG has a defined role in developing the transportation control measures (TCMs) for the AQMP. This can include new TCMs that help reduce the region's "black box" of undefined emission reductions. In its role as a Council of Governments, SCAG can influence a local jurisdiction's actions by providing guidance on policies that address criteria pollutants, greenhouse gases, and public exposure to toxics and other pollutants of concern. It can also prioritize funding for planning and/or transportation projects to projects that are most consistent with the RCP's policies. Finally, as the authorized regional agency for Inter-Governmental Review of Programs proposed for federal financial assistance, SCAG can be a regional clearinghouse for data, funding information, program coordination, and recommend that issues at the project or General Plan level be addressed to ensure consistency with the RCP.
- **Local Governments:** Cities and counties can amend general plans to implement land use, energy, transportation, and other policies that reduce their carbon foot-

print consistent with State law. In addition, local governments can use their land use authority to properly buffer residences and other sensitive land uses from freeways, industrial activity centers, and other sources of toxics or ultrafine particulates.

Continuing the trend toward attainment of clean air standards will be difficult given the pace of population growth, freight activity from our sea and airports, and increasing congestion from a transportation system with limited opportunities to expand roadway capacity and a heavily-subsidized public transit system. The new and revised proposed actions require a collaborative effort from federal, state, and local government in order to meet the air quality targets.

Historically, there has been an inherent conflict between the objectives of economic development and environmental protection. Today, it is possible to achieve economic growth without sacrificing protection for the environment. However, much more work will be needed to achieve this equilibrium. As such, collaborative efforts undertaken by various federal, state, and local regulatory agencies are necessary in overcoming this challenge.

The goals, outcomes, and action plan of the RCP Air Quality Chapter aim to coordinate these activities to help the region develop strategies that utilize the most effective technologies, transportation investments, urban design strategies, which reduce air pollution, improve air quality, and protect human health and the natural environment.





AIR QUALITY GOALS

- Reduce emissions of criteria pollutants to attain federal air quality standards by prescribed dates and state ambient air quality standards as soon as practicable.
 - Reverse current trends in greenhouse gas emissions to support sustainability goals for energy, water supply, agriculture, and other resource areas.
 - Minimize land uses that increase risk of adverse air pollution-related health impacts from exposure to toxic air contaminants, particulates (PM₁₀, PM_{2.5}, ultrafine), and carbon monoxide.
 - Expand green building practices to reduce energy-related emissions from developments to increase economic benefits to business and residents.
- Ventura County (to be determined by ARB by fall 2007)
 - Imperial County by 2007
 - Attain the federal PM_{2.5} standards in the South Coast Air Basin by 2015.
 - Reduce the region's greenhouse gas emissions to 1990 levels by 2020.
 - Amend local government General Plans to limit future growth of residences and other sensitive receptors near major sources of toxic air contaminants and other hazardous air pollutants (e.g., freeways, railyards, and industrial facilities).
 - All cities in the region adopt green building standards by 2012.

AIR QUALITY OUTCOMES

- Attain the federal 8-hour ozone standard by the dates specified in the 2007 AQMPs for the respective non-attainment areas:
 - South Coast Air Basin by 2024
 - Coachella Valley by 2019
 - Antelope Valley and Western Mojave Desert (to be determined by ARB by fall 2007)

AIR QUALITY ACTION PLAN

IS/Best Practice	Legislation	Conformity	Constrained Policies	Potential for Direct/Indirect Benefits										Other Benefits	
				Land Use	Transportation	Air Quality	Water	Energy	Open Space	Economy	Security	Solid Waste	Public Health	Climate Change	
SCAG Policies (SCAG policies shall be subject to consideration for future Overall Work Plans)															
X			AQ-1 SCAG shall implement control measures from local Air Quality Management Plans (AQMPs) by:		X	X		X		X				X	X
X			AQ-1.1 Ensuring that transportation plans, programs, and projects are consistent with State air quality plans for attaining and maintaining the health-based National Ambient Air Quality Standards (NAAQS).		X	X		X		X				X	X
X			AQ-1.2 Ensuring compliance with the Transportation Conformity Rule, including the new air quality standards for fine particulate matter (PM2.5) and 8-hour Ozone.		X	X		X		X				X	X
X			AQ-1.3 Ensuring that there is continued development of Transportation Control Measures (TCMs) in the South Coast Air Basin (SCAB).		X	X		X		X				X	X
X			AQ-2. SCAG, in conjunction with stakeholders, will pursue environmentally sustainable strategies that implement and complement climate change goals and outcomes.	X	X	X	X	X	X	X				X	X
X			AQ-2.1 SCAG, in conjunction with stakeholders, will develop policies and guidance that support the greenhouse gas goals set forth in the Global Warming Solutions Act of 2006 (AB 32), which requires a reduction in global warming emissions to 1990 levels by 2020.	X	X	X		X						X	X
X			AQ-2.2 SCAG will participate in the development of rules to implement ARB's Group 1 "discrete early action greenhouse gas reduction measures." These include the proposed Low Carbon Fuel Standard, reduction of refrigerant losses from motor vehicle air conditioning maintenance, and increased methane capture from landfills.			X		X					X	X	X
X			AQ-2.3 SCAG will participate in the development of ARB's Group 2 non-regulatory activities and greenhouse gas regulations that will be enforceable after January 1, 2010, including electrification, phase two vehicle standards, and more refrigerant controls.			X		X						X	X
X			AQ-2.4 SCAG will participate in the development of ARB's Group 3 "traditional control measures" aimed to reduce criteria and toxic air pollutants which have concurrent climate co-benefits.			X		X						X	X
X			AQ-2.5 SCAG will provide assistance to local governments on how to address climate change issues in General Plan updates.	X	X	X	X	X	X	X				X	X
X			AQ-3 SCAG shall develop policies that discourage the location of sensitive receptors that expose humans to adverse air quality impacts by:	X		X				X				X	
X			AQ-3.1 Assisting local governments develop policies that minimize exposure of sensitive receptors and sites (e.g. schools, hospitals, and residences) to major sources of air pollution, including diesel particulate matter emissions, such high-traffic freeways and roads, rail yards, ports, and industrial facilities.	X		X				X				X	
X			AQ-4 SCAG shall promote sustainable building practices by:	X		X	X	X		X			X	X	X

ICV/Best Practice	Legislation	Contribution	Constrained Policies	Potential for Direct/Indirect Benefits										Other Benefits	
				Land Use	Transportation	Air Quality	Water	Energy	Open Space	Economy	Security	Solid Waste	Public Health	Climate Change	
X			AQ-4.1 Disseminating information about energy efficiency and green building programs and energy use reduction, such as the EPA's Energy Star Program, the South Coast Air Quality Management District's (AQMD) Equipment Exchange Program, and U.S. Green Building Council's (USGBC) LEED Program through the SCAG web site, web links to other programs, and educational workshops and presentations.	X		X	X	X		X		X	X	X	
			AQ-4.2 Adopting a policy to strive for carbon neutrality for its own facilities and operations.		X	X		X		X		X	X	X	
X			AQ-4.3 Utilizing its Intergovernmental Review (IGR) process to recommend utilization of green building practices as potential mitigation measures.	X		X	X	X		X		X	X	X	
X		X	AQ-4.4 Engaging both private and public sectors to assist local government in the creation of green business certification program for businesses that want to reduce energy usage.			X		X		X			X	X	
Local Government Policies															
X			AQ-5 Local governments should implement control measures from local Air Quality Management Plans (AQMPs) such as accelerating the turnover of older, more polluting mobile and stationary source equipment using AB 2766 funding per the State Implementation Plan (SIP).		X	X		X		X			X	X	
X			AQ-6 Local governments should support and pursue environmentally sustainable strategies that implement and complement climate change goals and outcomes such as updating their General Plans to help address the State's AB 32 mandate. This should include an inventory of 1990 emissions of greenhouse gases and a strategy for reducing 2020 emissions to those levels..	X	X	X	X	X		X			X	X	
X			AQ-7 Local governments should develop policies that discourage the location of sensitive receptors that expose humans to adverse air quality impacts such as amending General Plans, zoning ordinances, business licensing, and related land use permitting processes to minimize human health impacts from exposure of sensitive receptors to local sources of air pollution. Jurisdictions should consider applicable guidance documents, such as ARB's Air Quality and Land Use Handbook: A Community Health Perspective and the South Coast AQMD's Guidance Document for Addressing Air Quality Issues.	X	X	X				X			X		
X			AQ-8 Local governments should practice and promote sustainable building practices by:		X	X		X		X			X	X	
X			AQ-8.1 Updating their General Plans and/or zoning ordinances to promote the use of green building practices, which include incorporating LEED design standards and utilizing energy efficient, recycled-content and locally harvested or procured materials.			X		X		X			X	X	
X			AQ-8.2 Developing incentive programs (e.g. density bonuses) to encourage green building and resource and energy conservation in development practices.			X		X		X			X	X	
X			AQ-8.3 Adopting policies that strive for carbon neutrality for their own facilities and operations.		X	X		X		X			X	X	

ID#	Description	Legislation	Coordination	Strategic Initiatives	Potential for Direct/Indirect Benefits										Other Benefits	
					Land Use	Transportation	Air Quality	Water	Energy	Open Space	Economy	Security	Solid Waste	Public Health	Climate Change	
SCAG Initiatives (SCAG initiatives shall be subject to consideration for future Overall Work Plans)																
	X	X	AQ-SI1 Identify new SIP control strategies that reduce the amount of undefined emission reductions from the transportation system necessary to reach attainment including transformative goods movement strategies.			X	X								X	X
	X	X	AQ-SI2 SCAG, in conjunction with the U.S. Environmental Protection Agency (EPA), the California Air Resources Board (ARB), local air districts, and other stakeholders, shall develop a white paper and build consensus on how to identify discrete control measures that replace the undefined reductions in attainment plans.			X	X								X	X

Footnotes

- ¹ http://lungaction.org/reports/sota07_cities.html
- ² California Air Resources Board. "Recent Research Findings: Health Effects of Particulate Matter and Ozone." January 2004. Available at: <http://www.arb.ca.gov/research/health/fs/pm-03fs.pdf>
- ³ South Coast Air Quality Management District. 2007 Air Quality Management Plan. Available at: http://www.aqmd.gov/aqmp/07aqmp/aqmp/Chapter_2.pdf
- ⁴ Recognizing the need for immediate action, SCAG adopted a resolution in May 2007 urging the federal and state governments to take emergency responses in the face of an air quality health crisis. Subsequently, the ARB and SCAQMD worked to find additional emission reductions from already proposed measures or new measures to help meet the PM_{2.5} air quality standard. In September 2007, representatives from ARB and SCAQMD, and SCAG reached an agreement on emission reduction measures needed to meet the PM_{2.5} deadline in 2015. Further, the three agencies (i.e., ARB, SCAQMD, and SCAG) acknowledge that they need to identify new ways to achieve the 8-hour ozone standard by 2024 by tackling the "black box" emission reductions associated with long-term measures. Thus, the three agencies will develop a discussion paper which explores potential new or transformative strategies, such as state-of-technology zero and near-zero transportation systems, other mechanisms such as fee-based incentives, and availability of public funding assistance programs.
- ⁵ U.S. Environmental Protection Agency. Available at: <http://www.epa.gov/oms/greenhousegases.htm>
- ⁶ National Safety Council. Available at: http://www.nsc.org/ehc/mobile/mse_fs.htm
- ⁷ California Air Resources Board. "Guidelines for the Generation of Mobile Source Emission Reduction Credits Through Purchase and Operation of New, Reduced-Emission Heavy-Duty Vehicles." September 1995. Available at: <http://arb.ca.gov/msprog/mserc/hdcrguid.pdf>
- ⁸ California Air Resources Board. "Diesel Health Effects Fact Sheet." Available at: http://www.arb.ca.gov/research/diesel/dpm_draft_3-01-06.pdf
- ⁹ <http://www.aqmd.gov/aqmp/AQMPintro.htm>

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REGIONAL COMPREHENSIVE PLAN



Solid Waste

2008

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REGIONAL COMPREHENSIVE PLAN

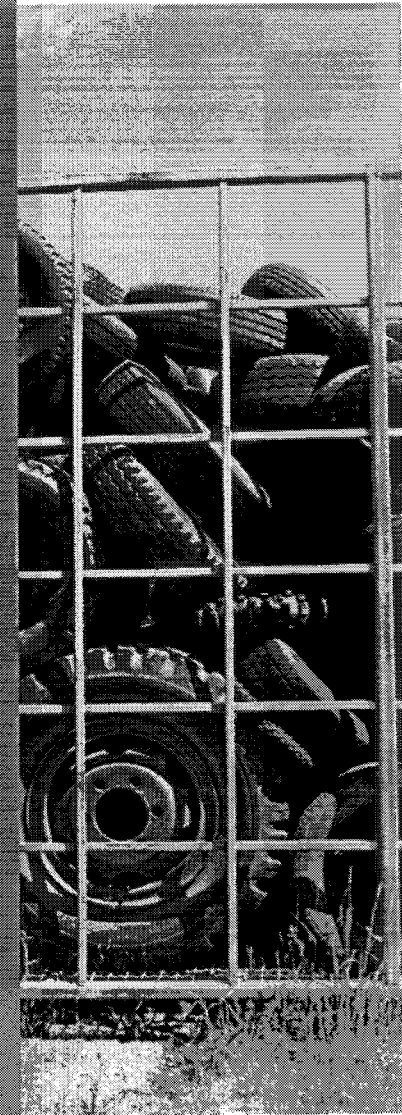
This RCP chapter is meant to take a close look at some of the challenges in solid waste management that our region is facing. It will provide a framework for taking the first steps toward a solution. Because this will be an ongoing process, there are some issues – such as hazardous waste, that have not been specifically addressed. However, it is implied that many of the policies described for solid waste management will also apply to management of hazardous wastes.

THE CHALLENGE

Waste comes from homes, businesses, and industrial enterprises. Between 1995 and 2005, our region disposed of approximately 33 million tons of municipal solid waste (MSW) into local landfills each year.¹ The average resident disposes of approximately 2.5 pounds of trash a day² while non-residential disposal adds up to 1.2 pounds disposed for every \$10 of sales receipts.³ Although we have made great strides in reducing per capita generation – in 1990, residential disposal was estimated at 3.1 pounds per day, existing landfills will not be enough to accommodate our ever-growing population and economy. Therefore, it is imperative that our region works together to develop better strategies for managing our waste.

Traditional solid waste management strategies have relied heavily on creating high capacity, regional landfills (megafills) and, to a lesser extent in California, incineration technologies (such as direct combustion or combustion with energy recovery) to address disposal issues. However, due to significant public opposition, unavailability of suitable land, environmental concerns, and the regulatory framework, it has become increasingly difficult to expand and/or site, permit, and operate new landfills and waste-to-energy (incineration) facilities. Federal, State, and local zoning regulations restrict the number of sites suitable for development. Some restrictions on land use include areas with unstable soils and terrain, landslide-susceptibility, fault areas, seismic impact zones, land near airports, and land in 100 year flood plains. Potential landfill sites must also consider migration control of leachate and methane, soil type to provide a firm foundation, hydrologic settings that will affect landfill layout and drainage characteristics, and a host of other factors. In addition, local public opinion plays a big role when landfills are being sited.^{4,5}

Dwindling landfill capacity and increasing health and environmental concerns have forced both the region and the state to make concerted efforts at developing other waste management methods including reducing the amount of waste that goes into



WHEN LANDFILLS CLOSE

Although landfills employ extensive environmental control systems, concerns have been raised about post-closure operations and whether landfill operators are capable of maintaining landfill facilities until the waste no longer poses a risk to public health, safety, and the environment.

Post-closure care of landfills is an important issue that will require decision-makers, the waste industry, environmental organizations, and other stakeholders to continue working together towards developing an adequate solution.

landfills. The costs for landfilling our garbage will continue to increase as landfill space decreases. These costs will ultimately be passed on to residents and businesses in the form of higher disposal fees and eventually, in conspicuous impacts to public health and the environment.

Overflowing landfills are only a symptom of a bigger problem — the mismanagement of our natural resources. The result of this mismanagement is evident in the mountains of garbage that we produce and the associated health and environmental impacts that result. For example, to obtain the resources used in the manufacturing and production of many of the goods that we use everyday, the mining industry moves an estimated 28 billion tons of soil and rocks each year (globally).⁶ A 1999 study puts this figure at 48.9 billion tons when biomass extraction is included and 8.2 tons per capita average global resource consumption. When broken down by country, figures show that on a per capita level, extraction of raw materials increases with development status.⁷

The goods produced from these resources are usually single-use products that we effortlessly replace or throw away. There is an inextricable link between our current level of resource consumption, the waste we produce, and many environmental problems. Mining leaves behind a wake of destructive impacts. From threatening local and global biological diversity through habitat destruction to increased chemical contamination, erosion, and silting of lakes and streams to toxic air pollution containing arsenic and lead emissions.⁸ Our current rate of

natural resource extraction has already created health and environmental impacts that will last long into future generations.

THE PLAN

We will need a combination of both short and long term solutions to effectively address our overwhelming waste problem. In the short term, we will still need to rely heavily on landfills and, when local facilities have filled to capacity, exporting our waste to other areas, leading to higher trash rates and added traffic congestion and air pollution. In the long term, we will need to change the way we think about trash and move towards a system of waste prevention and minimization. The move towards this system will take time and require a variety of waste management strategies, including development of conversion technology facilities capable of converting post-recycled residual waste material into useful products to help reduce our dependence on landfills. Our goal is to achieve maximum diversion from landfills through emerging technologies with diversion credit.

Strategies for Managing Our Waste

Landfills today are technically sophisticated, highly regulated, and closely monitored by many local and state agencies. Methane and leachate collection systems are installed in many facilities and state-of-the-art leachate⁹ barriers (landfill liners) are required under current regulations. In turn, landfill operations in Southern California have methane capture

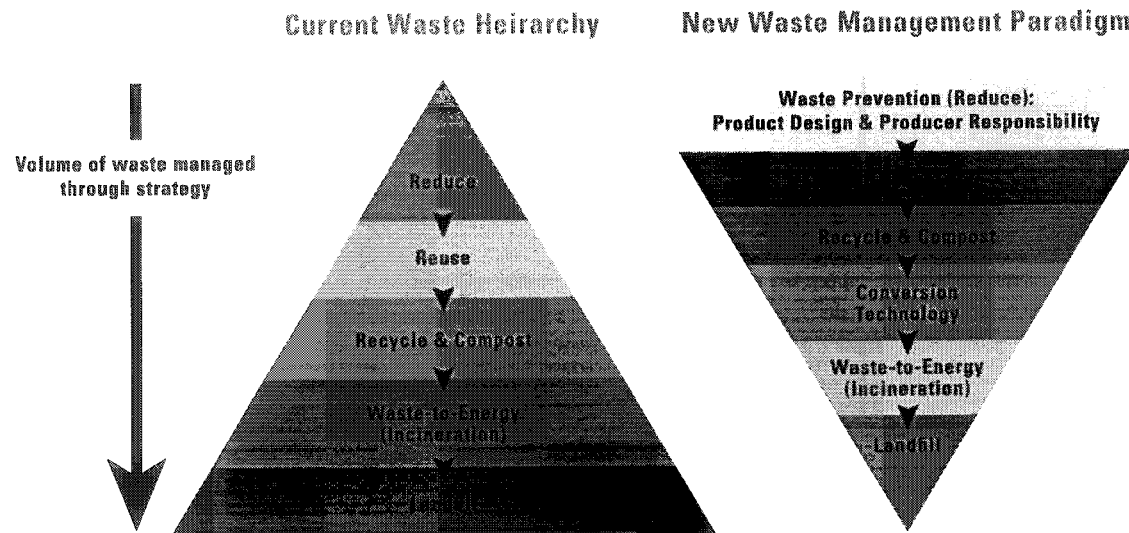
technologies that turn methane emissions into energy. Average landfill gas emissions are comprised of 50 percent methane. For example, the Puente Hills landfill currently produces 50 MW (gross) of power from landfill capture operations which it sells to Southern California Edison.¹⁰

Landfills fill a critical need today and will continue to be needed well into the future. Even as we employ all waste prevention, recycling, reuse, composting, and conversion technology strategies, there will always be some inefficiencies in the system and therefore, waste that will need to be disposed at a landfill. The challenge will be to change our ideas of resource consumption

and waste and to begin to think of disposal to landfills as the last resort in waste management. Many of today's health and environmental concerns will become less of a problem as we reduce our garbage volume and become more selective about what we consider trash.

Our current infrastructure to manage waste focuses on disposal first, followed by recycling, reducing, and reusing. The waste hierarchy envisioned for the future focuses on reducing first, then reuse, recycling, conversion technologies and finally disposal to land fill (see Figure 7.1).

FIGURE 7.1
Figure Title



Source



WHAT ARE LOCAL COMMUNITIES DOING?

Many forward thinking communities in the SCAG region are already implementing and adopting policies to increase their waste diversion goals and ensure a better quality of life for their local residents.

► City of Los Angeles: 70 percent diversion by 2020; 90 percent by 2025

City of Santa Monica: 70 percent diversion by 2010

City of Pasadena: No waste to landfills and incinerators by 2040

► 16 cities/townships in San Bernardino County have partnered to educate their residents and businesses on waste reduction, reuse and recycling.

Shrinking local landfill capacity is also forcing us to transport waste to more distant landfills. A prime example of this is the planned waste-by-rail system being developed by the County Sanitation Districts of Los Angeles County. The system is designed to address the projected shortfall of disposal capacity in Los Angeles County by transporting post-recycled waste to an out-of-county landfill. The rail system will have multiple starting points at large-scale materials recovery facilities throughout Los Angeles County.¹¹ Existing rail lines will be used to transport the waste to Mesquite Regional Landfill, in Imperial County located approximately 35 miles east of Brawley. The 2,290 acre landfill is under construction and expected to be operational by 2011/2012. It is permitted to accept up to 20,000 tons of waste per day from L.A. County and 1,000 tons per day from Imperial, with a maximum capacity of 600 million tons of solid waste over a 100 year lifespan.^{12,13} Due to potential air quality impact that may result from solid waste rail operations, it is expected that waste by rail operations will be consistent with strategies developed for the Air Quality Management Plan (AQMP) and the Regional Transportation Plan (RTP).

Although exporting waste is not a preferred waste management option, it is a necessary strategy for ensuring the County has a place to dispose of the garbage generated by County residents and businesses. Unlike other states, California does an excellent job of keeping solid waste within its borders. Only 1 percent of waste generated in California is exported out of

state. In the SCAG region, less than 1 percent of our waste is exported outside of the region.¹⁴

Diverting Garbage Away from Landfills

In 1989, the legislature passed the California Integrated Waste Management Act (AB 939).¹⁵ This bill mandated a 50 percent solid waste diversion¹⁶ rate by the year 2000 for all cities, counties, and applicable regional agencies in California, but did not include provisions for achieving the diversion rate. Under AB 939, local governments are responsible for preparing a diversion plan and instituting a financial mechanism to implement the plan.

Since then, Californians have done a great job in reducing the amount of waste sent to landfills. Although not all individual jurisdictions have managed to achieve the 50 percent diversion rate, all jurisdictions are making good-faith efforts to comply with the unfunded mandate by implementing quality programs. The estimated diversion rate for California in 2006 is 54 percent (our region's diversion rate is estimated at 50 percent). The California diversion rate translates to 50.1 million metric tons of waste (out of 92.2 million metric tons of waste generated) that avoided disposal to landfills.¹⁷ Diversion is generally defined as the reduction or elimination of the amount of solid waste from solid waste disposal (to landfill or incineration). Thus far, only source reduction (waste prevention), reuse, recycling, and composting activities are considered diversion.

Economic Benefits of Diversion

Diversion activities create jobs, add local revenue, and help stimulate many economic sectors. Some employment opportunities created by these activities include government and private staffed collectors, recyclable material wholesalers, compost and miscellaneous organics producers, materials recovery facilities, glass container manufacturing plants, plastics converters, and retail used merchandise sales. A 2001 report from UC Berkeley stated that, "diverting solid waste has a significantly higher (positive) impact on the economy than disposing it." Diversion also helps communities save money by avoiding payment of tipping fees on each ton of waste disposed. The UC Berkeley study estimated that statewide economic impacts from disposal and diversion at 1999 rates were approximately

17 to 20 percent higher than the impacts if all the waste had been disposed (see Table 7.1).¹⁸ This is because reuse and recycling are inherently value-adding, whereas disposal is not; and value-adding processes support jobs and economic activity.¹⁹

The California waste stream is primarily composed of organic (food) waste, paper products, and construction and demolition debris. Harder-to-decompose items such as plastic, glass, metal, electronic, and hazardous wastes are also present in the waste stream in significant amounts. (see Figure 7.2).

TABLE 7.1 ECONOMIC IMPACTS OF 1999 WASTE GENERATION GOING TO DISPOSAL OR DISPOSAL AND DIVERSION

Region		Estimated Final Sales 1999 (billions of dollars)	Impact on Economy			
			Output ^a (billions of dollars)	Total Income ^b (billions of dollars)	Value Added ^c (billions of dollars)	Number of jobs created
All California	Disposal only	7.5	18.0	6.8	9.0	154,000
	Disposal and Diversion	9.2	21.2	7.9	10.7	179,000
Southern California ^d	Disposal only	4.1	9.6	3.6	4.7	82,000
	Disposal and Diversion	5.1	11.3	4.2	5.6	95,000

Table adapted from Goldman, G. and A. Ogishi, 2001. The Economic Impact of Waste Disposal and Diversion in California. A Report to the California Integrated Waste Management Board.

^a Southern California region includes all six SCAG region counties plus San Diego County.

^b Output impact is a measure of how the disposal sectors influence total sector sales in the economy.

^c Income impact measures income attributed to disposal-related economic sectors.

^d Value added is the increase in the value of goods and services sold by all sectors of the economy.

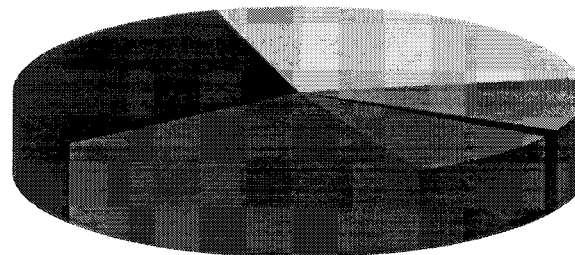


Reuse and Recycling

California hosts approximately 5300 recycling and reuse facilities, employing 84,000 people and generating an annual payroll of \$2.2 billion with \$14.2 billion in annual revenues.²⁰ However, California's recycling market is still on shaky ground, especially because of competition from foreign recycling markets. Many countries will pay a premium for our recyclables because they lack their own raw materials. In an effort to support the local

FIGURE 7.2

Figure Title



- Household Hazardous Waste 0.2% (74,000 tons)
- Organic 30.2% (12,166,000 tons)
- Construction & Demolition 21.7% (8,732,000 tons)
- Plastic 9.5% (3,810,000 tons)
- Electronics 1.2% (481,000 tons)
- Metal 7.7% (3,115,000 tons)
- Glass 2.3% (935,000 tons)
- Paper 21% (8,446,000 tons)
- Mixed Residue 1.1% (437,000 tons)
- Special Waste 5.1% (2,038,000 tons)

Source: California Integrated Waste Management Board. 2004. *Statewide Waste Characterization Study*. (Publication # 340-04-005)

recycling industry, the Integrated Waste Management Board has developed the Recycling Market Development Zone (RMDZ) program. The program provides loans, technical assistance, and free product marketing to businesses that use materials from the waste stream to manufacture their products.²¹ Although this market development program is important, local governments have continually stressed the need for the State to take a leadership role in developing markets since our services and products are trading and competing on a global basis, and thus are susceptible to events/market fluctuations throughout the world. Based on the economic principle of supply and demand, recyclables will end up in landfills if markets are not developed or strengthened.

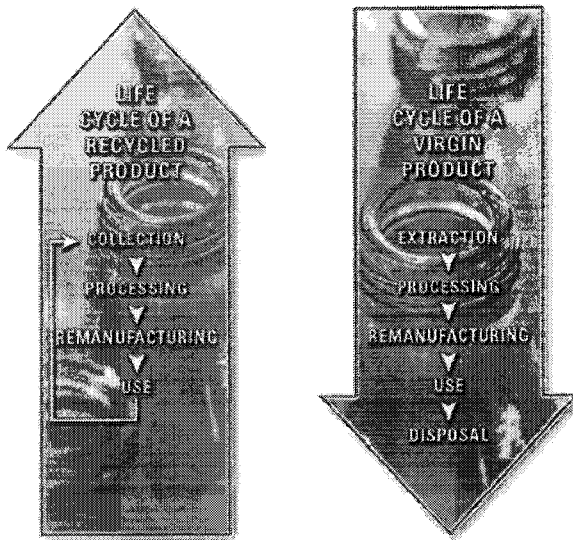
There are numerous benefits to recycling and reuse programs. Reuse and recycling reduce the need for landfilling and prevent pollution that may be caused by the manufacturing, transportation, and use of products from virgin materials (see Figure 7.3). They help conserve natural resources (timber, water, minerals); sustain the environment for future generations; save energy and avoid fossil fuel use from extractive industries; decrease emission of GHGs that contribute to global climate change; protects and expands U.S. manufacturing jobs; and increases U.S. competitiveness.²²

A 1994 Tellus Institute study showed that with the exception of aggregate materials for road base, many materials show energy savings by using recycled materials instead of virgin materials. The range of differences in energy saved varies

2008

greatly. At the high end is aluminum for which the difference in virgin versus secondary production is 142.68 MMBtu per ton of intermediate product (i.e., it takes 142.68 MMBtu per ton more to process aluminum from raw ore than it does to process the same product from recyclables). At the low end is molten glass for which the energy difference is only 1.54 MMBtu per ton of product.²³ A more recent life cycle assessment study from ALCOA researchers has shown that it takes 95 percent less energy to recycle aluminum than to create it from raw materials.²⁴

FIGURE 7.3
Figure Title



Source: Environmental Protection Agency. 1998. *Puzzled About Recycling's Value? Look Beyond the Bin*. EPA530-K-97-008. <http://www.epa.gov/msw/recpubs.htm>.

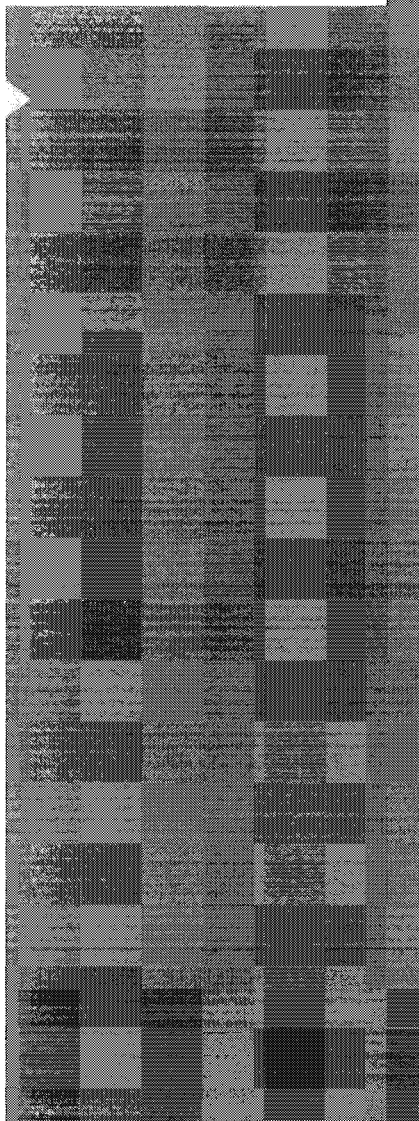
Construction and Demolition (C&D) Debris

Construction and demolition debris comprises 21.7 percent of California's overall disposed waste stream. This equates to approximately 8.7 million tons of C&D debris disposed to landfill. Lumber debris makes up half of that figure, followed by concrete, asphalt roofing, gypsum board, and composite/remainder C&D.²⁵

Addressing C&D waste prevention can be as simple as using best management practices during construction such as advanced framing, double checking measurements to reduce sizing mistakes, and using durable materials that need less frequent replacement.²⁶ It also means using green building design principles to maximize the use of remanufactured, recycled, or more efficient materials or materials that are designed to be replaced in a modular manner. Unlike demolition waste, up to 80 percent of construction waste is reusable or recyclable.²⁷ C&D diversion rates have reached as high as 97 percent on individual State of California projects, and are typically at least 50-75 percent in green buildings.²⁸

Cities are starting to institute green building ordinances that require maximum recycling of C&D debris for many types of new construction. Uniform statewide requirements for green building or C&D recycling ordinances do not yet exist, although state legislation has been introduced to address this issue. Currently, each city develops its own ordinance: defining the size, cost, and type of project that is subject to C&D recycling as well as the amount of material recycling required.





The 2003 report to California's Sustainable Building Task Force provides a comprehensive and convincing study of the value of green building savings. It was found that although there were minimal increases of about 2 percent in up-front costs to add green building features, life cycle savings resulted in 20 percent of total construction costs – more than 10 times the initial investment. For example, an initial up-front investment of up to \$100,000 to incorporate green building elements into a \$5 million project would result in a savings of \$1 million in today's dollars over the life of the building.²⁹

Food Waste, Organics, and Composting

Californians throw away more than 5 million tons of food scraps each year. Food waste makes up 14 percent of California's waste stream. This includes all food being disposed by residences, businesses, schools, prisons, and other institutions. Green material collection programs have been implemented in many cities and counties, but not until recently has collection of food scraps been considered. Management of food scraps provides additional opportunities to help meet the State's diversion goals as well as provide greater uses for this resource. The CIWMB suggests the following order for food scrap management: (1) prevent food waste, (2) feed people, (3) convert to animal feed and/or rendering, and (4) compost. Large events and venues, public facilities (e.g., public agency and school cafeterias), and private business such as restaurants and grocery stores could all be targeted for food waste diversion activities.³⁰

Decomposition of food waste and other organics are a major source of greenhouse gas emissions from landfills. Organic waste comprises 30 percent of waste disposed to landfills. That figure includes food scraps, textiles, composite organics, and green material like landscape and tree trimmings, grass clippings, and agricultural residues. Diverting organic wastes to composting prevents the production of methane, which is produced during decomposition under anaerobic (oxygen-lacking) conditions such as those found in landfills. Composting has many environmental benefits. In addition to reducing landfill volume and emissions by diverting organic waste, compost can be used in the following ways: to enhance garden and agricultural soils, in wetland construction, as landfill cover, for erosion control, and in land/stream reclamation projects. Although there are environmental concerns associated with composting, primarily emissions and odor complaints, advancements in composting technologies and proper implementation of these technologies are able to help alleviate these concerns.

Conversion Technologies

Conversion technologies (CTs) refer to a diverse set of processes used to convert waste products into high-value goods such as industrial chemicals or gas, liquid, and solid fuels. Fuel products can be burned to produce energy or refined for higher quality uses to make a variety of industrial products.³¹ The attraction of CTs is their ability to convert landfill waste into products that can take the place of fossil fuels mined from natural resources.

CTs target *post-recycled* municipal solid waste residuals currently destined for disposal at landfills as their feedstock. That is, before waste is sent to a CT facility, it is sorted to make certain recyclables are removed and collected. Many CT proponents feel CTs with recycling offer a much better alternative than incineration or disposal to landfill. In addition, CTs have the capability of recovering additional recyclable materials, especially metals and glass that might otherwise not be feasibly recoverable since it operates at an optimum level when recyclables are extracted prior to the conversion process.

A study conducted for CIWMB compared a life cycle analysis of landfills (with various stages of landfill gas collection), waste to energy (WTE) combustion (incineration), and hypothetical conversion technologies. It was found that the hypothetical CT scenario could potentially have a two times lower net energy consumption when compared to the incineration scenario and up to 11 times lower than landfill without energy recovery. The CT scenario included energy savings (10-20 percent of the total net energy savings) from additional materials recycling prior to conversion and the offsets associated with the prevention of extraction and production of virgin materials.³² However, the environmental benefits of conversion technology scenarios are highly dependent on their ability to achieve high conversion efficiencies and high materials recycling rates.

At the present time, conversion technologies are considered ineligible as a diversion strategy under AB939 and the permitting and siting of CT facilities has been met with some opposition. Conversion technologies have been around for

decades, but it is only recently that their applicability to solid waste management has begun to be fully developed. At this time, the successful development and use of CTs is occurring throughout Europe and Japan.

Three main categories of conversion technologies are being developed for management of solid waste - thermal, chemical, and biological conversion - as well as systems that utilize a combination of 2 or more categories of conversion to more effectively convert the various components of the waste stream.

- Thermal (thermochemical) conversion is characterized by processes that use high temperatures to achieve high conversion rates of dry, organic material. These processes include gasification, pyrolysis, plasma arc, and catalytic cracking. *Advanced thermal conversion (advanced thermal recycling) primarily refer to technologies that employ only pyrolysis and/or gasification to process municipal solid waste.*³³ The primary products of thermochemical conversion technologies include: fuel gas (syngas - CO₂, CO, CH₄, H₂), heat, liquid fuel, char, and ash.³⁴
- Biological (biochemical) conversion processes rely on microorganisms to break down the biogenic, organic fraction of the waste stream. These processes are focused on the conversion of biodegradable organics found in MSW residue into high energy products. The products of bioconversion are biogas (CH₄ and CO₂), biofuel (ethanol, biodiesel, fuel oil, etc.), and residue that can be used for compost. Biogas usually has less energy (Btu/ft³) than



LIFE CYCLE ASSESSMENTS

Life Cycle Assessments (LCAs) need not be limited to analyzing the life cycle of a single product. LCA is a methodology that can analyze the interactions of a technological system with the environment. It can be used as a decision-making tool to help weigh environmental and health impacts between various waste management options. If used correctly,³⁵ LCAs can answer questions like, "Are impacts from manufacturing aluminum cans from raw material really much worse than the impacts from re-manufacturing of recycled aluminum and if so, how much worse?" and "Have the costs of environmental and health impacts, such as losing ecosystem services¹⁰ and the loss of worker days been calculated into the costs?" Governments, private firms, consumer organizations, and environmental groups can all use LCA as a decision support tool.³⁷

syngas produced by thermal conversion systems.³⁵ Non-biodegradable organic feedstocks, such as most plastics, are not convertible by biochemical processes.

- Chemical (physicochemical) conversion processes use lower temperatures than thermal conversion and have lower reaction rates. These processes rely on chemical reactions and are focused on the conversion of organic wastes into high energy products. Processes, such as acid hydrolysis, thermal depolymerization, and fermentation, typically focus on generating fuels such as ethanol or biodiesel.

Maximizing Diversion - A New Paradigm

In the last 10-15 years there has been a strong movement to recognize the link between the waste we generate and the natural resources we consume. Today's economy is based on the extraction of "cheap" resources to make products that are largely designed to end up in landfills. Waste is a reflection of our inefficient use and mismanaged consumption of finite, natural resources. The 2004 Growth Vision recognized this and stated that "management of solid waste (and hazardous waste) must be sustainable in order to efficiently manage natural resources and in order to protect the environment today and in the future."

A new paradigm is taking shape that builds on all the waste diversion strategies that were previously discussed. Although

the three Rs of solid waste management – Reduce, Reuse, Recycle – still hold true, a renewed emphasis on the first R is taking hold. We need to go beyond current waste diversion strategies by addressing waste elimination at the source and distributing the responsibility for waste on both the consumer and the producer. Instead of managing just the end results of our consumption-related activities (trash), we focus on resource conservation and management. The aim is to create a whole system approach to the way materials flow through society, where all discarded materials are resources for others to use and resource conservation and recovery is built into every process. It also means designing and managing products and processes to reduce impacts to the environment, volume and toxicity of waste and materials, and waste of natural resources, as well as managing materials flow to prevent the creation of un-recyclable products. We can probably never achieve 100 percent materials efficiency but, "we can get darn close!"³⁸

Strategies to maximize diversion look at the entire product life cycle to assess the true economic, environmental, and health-related costs of manufacturing products. Life cycle assessments³⁹ (LCAs) attempt to appraise all the inputs and outputs that are associated with the creation and disposal of a product. Included are the direct inputs to the production process, associated wastes and emissions, and the future (downstream) fate of the product. Using aluminum recycling and production as an example, downstream effects that should be analyzed would include the energy consumption and emissions of smelters used to melt the raw ore versus recyclable cans and the ultimate fate

and use of the product. In some cases, recyclables that have been locally collected are exported for use overseas.

LCAs and similar applications can identify deficiencies in a process and help compare the benefits and costs of multiple systems. By evaluating the existing materials flowing through a community, we can identify opportunities to take what one business considers a byproduct or waste and provide that material to another business that can use that material as production feedstock. In addition, an LCA that compares recycling systems with other waste management strategies (such as, disposal at landfills or disposal at conversion technology facilities) would provide useful information for basing future waste management decisions. Such an LCA for California's waste management system would be a useful tool for local policymakers.

Promoting these types of strategies is good regional policy as existing businesses can save money by creating efficiencies in production and government agencies and other organizations have better analytical tools for making important decisions.⁴⁰

Product Stewardship and Extended Producer Responsibility

This new paradigm requires that we change the current solid waste management hierarchy to one that focuses on product stewardship and extended producer responsibility principles because one of the most effective ways to manage waste is to prevent it from being produced in the first place.

Product stewardship is a product-centered approach to environmental protection. It extends the responsibility for a product to everyone involved in the product lifecycle. This means that manufacturers and producers design products that are recyclable, reusable, less toxic, less wasteful, and/or more durable. It also means getting rid of excessive packaging such as the cardboard box that encloses a plastic medicine bottle. Retailers and consumers are then responsible for ensuring that proper recycling and disposal of products occur.

Product stewardship is often used interchangeably with Extended Producer Responsibility (EPR). However, EPR focuses the brunt of the responsibility for creating an environmentally compatible product on the manufacturers and producers of the product. Producers retain responsibility for their end-of-life (EOL) products. This provides them with incentives for designing products for recycling, reuse and easy dismantling.⁴¹ For example, businesses making products that are leased, such as HP (photocopiers) have long known that their products will be returned so they have learned to make remanufacturing profitable. When businesses are compelled to internalize the true costs of wasteful packaging and inefficient material use, there is incentive to create more innovative and efficient waste management strategies.

EPR policies should give producers an incentive to design products that:

- Use fewer natural resources;



VOLUNTARY EXAMPLES OF EPR IN THE U.S.

Xerox's Asset Recycling Management Program - a model EPR (Extended Producer Responsibility) program - which has led to extensive product redesign. The program has generated substantial profits by maximizing recovery of the residual value of office equipment, which the company takes back at the end of its useful life.

Interface, a global carpet company, has a program to lease carpet and recycle it at the end of its life. The company has reduced manufacturing waste by 70 percent since 1996. This has resulted in a cumulative savings of \$336 million avoided costs from waste elimination activities.

Kodak's take-back and recycling program for single-use cameras has had marketing benefits in helping to dispel these products' image as throwaway items that quickly end up in the landfill.

- Use greater amounts of recycled materials in manufacturing;
- Can be reused;
- Can be more easily treated/dismantled and recycled;
- Reduce or eliminate the use of hazardous substances or materials in the manufacturing of products.

The EPR approach should be seen as a system for preventive environmental policy-making. EPR promotes a sustainable approach to resource use and reduces the quantity of solid waste going to a landfill, by diverting end of life products to re-using, recycling, or other forms of recovery. Many corporations are recognizing the value of EPR and have developed voluntary EPR strategies in their organizations.

The Solid Waste Action Plan

All of the strategies that have been laid out are meant to provide guidance and background for implementing the action plan that follows. The goal attempts to encapsulate the vision for solid waste and resource management that will move our region toward a more sustainable and healthier future. This will require a coordinated effort of implementing all of the short-term and long-term policies/actions that are contained within this plan. Some, of which require changing how our whole region thinks about solid waste management issues.

Recycling, composting, conversion technologies, and landfills all play a part in moving towards maximizing diversion. We

will need to employ this mix of strategies to handle current waste disposal needs as we transition to a system of real natural resource management. Even if we achieve close to 100 percent materials efficiency, there will still be residual waste that will need to be disposed at landfills or managed with conversion technologies.

SOLID WASTE GOALS

- A region that conserves our natural resources, reduces our reliance on landfills, and creates new economic opportunities in the most environmentally responsible manner possible.

SOLID WASTE OUTCOMES

- All SCAG region jurisdictions should meet a 40 percent waste disposal rate ⁴² by 2035 to minimize disposal to landfill provided appropriate utilization of technologies are permitted and diversion credit is provided by the State for waste management strategies including, but not limited to, appropriate and environmentally sound recycling, composting, and conversion technologies with diversion credit as well as other actions and strategies contained in this chapter, such as product stewardship and extended producer responsibility.
- Conversion and other alternative technologies should be available as a diversion strategy in the next five years with one or more new conversion technology facilities sited in the SCAG region by 2020.

SOLID WASTE ACTION PLAN

ID/Best Practices	Legislation	Confinement	Constrained Policies	Potential for Direct/Indirect Benefits										Other Benefits
				Land Use	Transportation	Air Quality	Water	Energy	Open Space	Economy	Security	Solid Waste	Public Health	Climate Change
SCAG Policies (SCAG policies shall be subject to consideration for future Overall Work Plans)														
		X	SW-1 SCAG shall encourage all levels of government to advocate for source reduction and waste prevention.			X	X	X		X		X	X	
X		X	SW-2 SCAG shall encourage policies that: (a) promote the expansion of recycling programs and facilities that provide local recycling services to the public and private sectors and (b) encourage the development of viable, local, and sustainable markets to divert materials from landfills (e.g., recycling markets).			X	X	X		X		X		X
X			SW-3 SCAG shall adopt and implement a recycled content procurement program and participate in programs that promote the purchase of recycled content products			X	X	X		X		X		X
		X	SW-4 SCAG shall support and encourage the CIWMB to conduct comprehensive life cycle assessments of all components of the waste management practices including but not limited to, waste disposal to landfills, composting, recycling, and conversion technologies. A comprehensive analysis must include environmental impacts, health effects, emissions, use of resources and personnel, costs of same to collect wastes and recyclables, transportation costs (local, within U.S. or international), processes to separate recyclables, and production of end products using collected recyclables and raw materials.			X	X	X				X		X
	X		SW-5 SCAG shall continue to support and encourage legislation that advocates for the elimination of unnecessary duplication and/or restrictive regulations that hinder recycling, reuse, composting and conversion of solid waste and redefines conversion technologies as a diversion strategy to allow development of these facilities in the SCAG region.			X	X	X		X		X		X
		X	SW-6 SCAG should coordinate region-wide initiatives on source reduction, reuse, recycling, composting, and conversion technology to increase economies of scale.			X	X	X		X		X		X
		X	SW-7 SCAG should encourage the equal distribution of industrial impacts among all income levels from all types of solid waste management facilities including recycling, composting, and conversion technology facilities.	X		X	X	X		X		X		X
		X	SW-8 SCAG shall support the development of public education and outreach efforts to increase awareness of the benefits of a regional policy to maximize diversion.			X	X	X		X		X		X

SOLID WASTE

Policy	Legislation	Contribution	Constrained Policies	Potential to Deliver/Realize Benefits										Other Benefits	
				Land Use	Transportation	Air Quality	Water	Energy	Open Space	Economy	Scenic	Solid Waste	Public Health	Climate Change	
Local Government Policies															
X			SW-9 Local governments should update general plans to reflect solid waste sustainability issues such as waste reduction goals and programs (1996 RCP; 135).	X		X	X	X	X				X		X
X			SW-10 Local governments should discourage the siting of new landfills unless all other waste reduction and prevention actions have been fully explored. If landfill siting or expansion is necessary, landfills should be sited with an adequate landfill-owned, undeveloped land buffer to minimize the potential adverse impacts of the landfill in neighboring communities.	X		X	X	X	X	X			X		X
X			SW-11 Local governments should discourage exporting of locally generated waste outside of the SCAG region. Disposal within the county where the waste originates shall be encouraged as much as possible. Green technologies for long-distance transport of waste (e.g., clean engines and clean locomotives or electric rail for waste-by-rail disposal systems) and consistency with AQMP and RTP policies should be required.	X	X	X	X	X	X	X			X	X	X
X			SW-12 Local governments should maximize waste diversion goals and practices and look for opportunities for voluntary actions to exceed the 50% waste diversion target.			X	X	X		X			X		X
X			SW-13 Local governments should build local markets for waste prevention, reduction, and recycling practices.			X	X	X		X			X		X
X	X		SW-14. Developers and local governments should integrate green building measures into project design and zoning such as those identified in the U.S. Green Building Council's Leadership in Energy and Environmental Design, energy Star Homes, Green Point Rated Homes, and the California Green Builder Program. Construction reduction measures that should be explored for new and remodeled buildings include: • Reuse and minimization of construction and demolition (C&D) debris and diversion of C&D waste from landfills to recycling facilities. • An ordinance that requires the inclusion of a waste management plan that promotes maximum C&D diversion. • Source reduction through (1) use of building materials that are more durable and easier to repair and maintain, (2) design to generate less scrap material through dimensional planning, (3) increased recycled content, (4) use of reclaimed building materials, and (5) use of structural materials in a dual role as finish material (e.g. stained concrete flooring, unfinished ceilings, etc.). • Reuse of existing building structure and shell in renovation projects. Building lifetime waste reduction measures that should be explored for new and remodeled buildings include: • Development of indoor recycling program and space. • Design for deconstruction. • Design for flexibility through the use of moveable walls, raised floors, modular furniture, moveable task lighting and other reusable building components.	X		X	X	X	X	X			X		X
X	X		SW-15 Local governments should develop ordinances that promote waste prevention and recycling such as: requiring waste prevention and recycling efforts at all large events and venues; implementing recycled content procurement programs; and instituting ordinances to divert food waste away from landfills and toward food banks and composting facilities.			X	X	X		X			X		X

Direct Practices	Legislation	Coordination	Constrained Policies	Potential for Direct/Indirect Benefits										Other Benefits	
				Land Use	Transportation	Air Quality	Water	Energy	Open Space	Economy	Security	Solid Waste	Public Health	Climate Change	
X			SW-16 Local governments should support environmentally friendly alternative waste management strategies such as composting, recycling, and conversion technologies.			X	X	X		X		X		X	
X			SW-17 Developers and local governments should develop and site composting, recycling, and conversion technology facilities that are environmentally friendly and have minimum environmental and health impacts.	X		X	X	X				X		X	
X		X	SW-18 Developers and local governments should coordinate regional approaches and strategic siting of waste management facilities.	X		X	X	X				X		X	
X			SW-19 Developers and local governments should facilitate the creation of synergistic linkages between community businesses and the development of eco-industrial parks and materials exchange centers where one entity's waste stream becomes another entity's raw material by making priority funding available for projects that involve co-location of facilities.	X		X	X	X				X		X	
X			SW-20 Developers and local governments should prioritize siting of new solid waste management facilities including recycling, composting, and conversion technology facilities in conjunction with existing waste management or material recovery facilities.	X		X	X	X				X		X	
X			SW-21 Local governments should increase programs to educate the public and increase awareness of reuse, recycling, composting, and green building benefits and raise consumer education issues at the County and City level, as well as at local school districts and education facilities.			X	X	X		X		X		X	
State and Federal Government Policies															
	X		SW-22 CIWMB should create waste diversion incentives to increase waste diversion past 50% including credit for conversion technology.			X	X	X		X		X		X	
	X		SW-23 The State and Federal governments should develop and implement new and existing legislation that requires recycled content procurement programs, favoring the purchase of recycled and recyclable products or products with built-in EPR design in all state and federal agencies.			X	X	X		X		X		X	
	X		SW-24 Federal and State governments should explore financial incentives such as tax credits, subsidies, and price supports for waste diversion activities that include waste reduction, recycling, composting, and conversion technologies.			X	X	X		X		X		X	
	X	X	SW-25 CIWMB, Air Resources Board, and the California Water Resources Board should coordinate to address regulatory challenges and streamline the permitting process for solid waste conversion and composting technologies.			X	X	X				X		X	
	X		SW-26 The Federal government and CIWMB should establish policies that provide (a) diversion credit for beneficial use of post-recycled, solid waste residuals managed at non-burn conversion technology facilities, and (b) separate and remove conversion technologies from the definition of "transformation."			X	X	X	X			X	X	X	

SOLID WASTE

ID/Best Practices	Legislation	Coordination	Constrained Policies	Potential for Direct/Indirect Benefits										Other Benefits	
				Land Use	Transportation	Air Quality	Water	Energy	Open Space	Economy	Security	Solid Waste	Public Health	Climate Change	
	X		SW-27 Federal, State, and local governments should support and encourage federal and state incentives for the research and development of pilot or demonstration projects for solid waste conversion technologies.			X	X	X	X			X		X	
		X	SW-28 CIWMB should do the following to improve education and awareness of solid waste management issues: (a) actively promote education regarding reuse, recycling, composting and solid waste conversion technology programs; (b) provide information concerning the costs and benefits of these programs to local governments; and (c) facilitate state and local government coordination of consumer awareness programs to minimize unnecessary duplication of effort in solid waste outreach programs carried out by local government.			X	X	X	X	X		X		X	
	X		SW-29 The Federal government should provide funding and support for continuation of public education programs on waste management issues.			X	X	X	X	X		X		X	

IS/Dist. Practices	Legislation	Coordination	Strategic Initiatives	Potential for Direct/Indirect Benefits								Other Benefits		
				Land Use	Transportation	Air Quality	Water	Energy	Open Space	Economy	Security	Solid Waste	Public Health	Climate Change
State and Federal Government Initiatives														
	X		SWSI-1 Federal, State and local governments should support and implement source reduction policies which promote product stewardship through the following actions: <ul style="list-style-type: none">• Create incentives for participation in Product Stewardship and Extended Producer Responsibility (EPR) initiatives such as, encouraging public-private partnerships with product stewardship goals (e.g. The European Green Dot system) and offering incentives to producers who use recycled content to encourage growth in the recycled contents market.• Create ordinances with EPR policies that require producers and manufacturers to produce "sustainable" packaging and products, develop life cycle assessments for products, as well as, support the development of infrastructure and markets for the recycling and reuse of these products. EPR principles that should be included are: increasing the useful life of products through durability and reparability; increasing production efficiency to produce less production waste and less packaging waste; increasing recyclable material content and reducing virgin material content; facilitating material or product reuse; and decreasing of the toxicity of products. Packaging should be easily recyclable or biodegradable based on any number of EPR strategies including, Design for the Environment (DfE) or Design for Disassembly (DfD) principles. For example, businesses such as, takeout food distributors, should utilize packaging that is compatible with recycling and composting options available.		X	X	X	X	X	X		X	X	X
	X		SWSI-2 Federal, State and local governments should create tax incentives that help companies derive profit from resource efficiency. Actions such as the following would be included: <ul style="list-style-type: none">• Institute Pay As You Throw (PAYT) solid waste disposal systems.• Require that companies take back certain types of packaging for reuse or recycling.		X	X	X	X	X	X		X	X	X

Footnotes

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- ¹¹ Sanitation Districts of Los Angeles County. 2007. Waste-By-Rail. http://www.lacsd.org/info/waste_by_rail/default.asp
- ¹² California Integrated Waste Management Board. 1997. Waste Board Approves Permit for Regional Landfill in Imperial County. Notice 97-031. <http://www.ciwmb.ca.gov/PressRoom/1997/mar/NR031.HTM>
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- ¹⁵ Public Resources Code (PRC), Section 41780.
- ¹⁶ Diversion is generally defined as the reduction or elimination of the amount of solid waste from solid waste disposal (to landfill or incineration). Source reduction (waste prevention), recycling, reuse, and composting activities are considered diversion.
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- ¹⁸ Goldman, G. and A. and Ogishi, The Economic Impact of Waste Disposal and Diversion in California. A Report to the California Integrated Waste Management Board, 2001.
- ¹⁹ National Recycling Coalition. 2001. California Recycling Economic Study. Prepared for the California Integrated Waste Management Board.
- ²⁰ Ibid.
- ²¹ California Integrated Waste Management Board. 2007. Recycling Market Development Zones. <http://www.ciwmb.ca.gov/RMDZ/>.
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- ³⁴ California Integrated Waste Management Board. 2004. Evaluation of Conversion Technology Processes and Products.
- ³⁵ URS. 2005. Conversion Technology Evaluation Report. Prepared for The County of Los Angeles Department of Public works.
- ³⁶ The Society for Environmental Toxicology and Chemistry (SETAC) has defined guidelines for the stages of a generic product life cycle that must be considered in LCAs (Tan and Culaba, 2002).
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- ³⁸ Zero Waste New Zealand Trust, 2003. Getting There! The Road to Zero Waste. Auckland: Envision New Zealand, Ltd.; Zero Waste International Alliance, 2007
- ³⁹ Also referred to as Life Cycle Analysis
- ⁴⁰ Chelsea Center for Recycling and Economic Development. N.d. Assessing the flow of materials in a region: lessons learned from three Massachusetts communities.
- ⁴¹ Lindqvist, T. Extended Producer Responsibility in Cleaner Production. Lund University. The International Institute of Environmental Economics.
- ⁴² Waste disposal rate means the amount of waste sent to landfills. This disposal rate roughly translates to a 60% diversion rate but with the caveat that strategies not counted under the current definition of diversion (such as conversion technologies and certain types of source reduction efforts) are credited as diversion.



Transportation

THE CHALLENGE

The continuing urbanization of our Southern California region makes it more difficult to make dramatic improvements to our transportation system. Rebuilding and expanding an existing transportation facility in a built out urban environment is expensive and often unpopular. When transit projects, new roads, or other travel options are unveiled, we see temporary improvements. However, those usually disappear within months, replaced by a return to traffic and congestion, which generally seem to get worse as the years go by. In 2006, the State of the Region report card gave a failing grade of "F" to Southern California, noting that we continue to rank as the most congested metropolitan region in the nation. While recent higher gas prices have helped reduce congestion growth, the region still shows a continuing trend towards reduced carpooling and transit ridership.

Our transportation challenge is shared by other metropolitan regions throughout the world. Traffic congestion is largely a symptom of the growth patterns and population density of our region. The decentralization of our region's growth, combined with the sheer density of people, jobs, and cars makes it nearly impossible for our transportation system to keep pace. Indeed, a successful transportation plan in any growing region of the

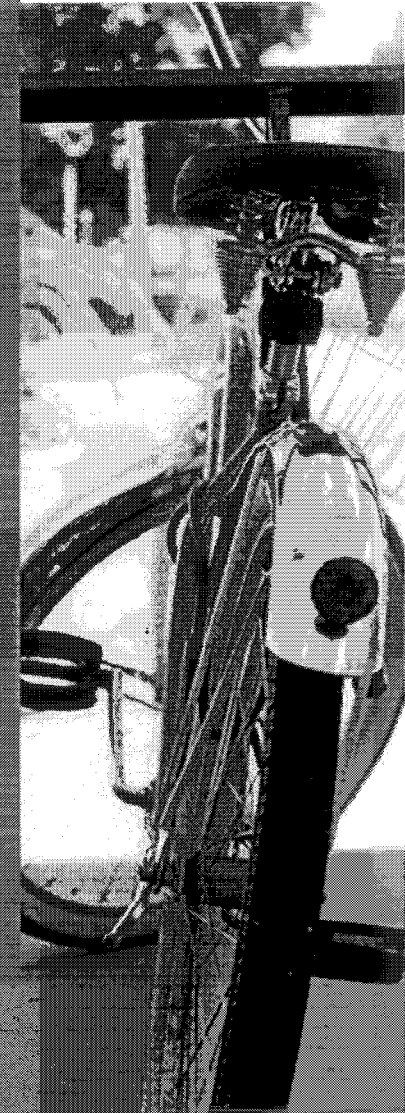
country is one that holds the line on traffic congestion. Most plans simply make future traffic "less worse" than if nothing were done altogether. Even if we had the limitless capacity (and funds) to expand our roads to relieve congestion, the short- and long-term impacts to growth, traffic congestion and the environment would be unacceptable.

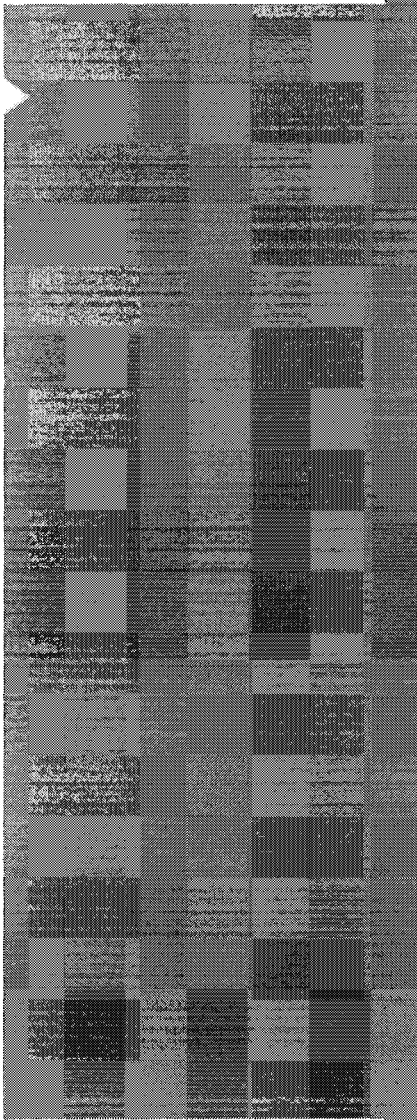
Indeed, the transportation system heavily influences environmental, economic, and quality of life issues both positively and negatively. An efficient transportation system minimizes impacts to our air quality, surface and underground water supplies, and helps accommodate growth that reduces the economic costs of living our lives. An inefficient system affects nearly every area of the environment directly and has an indirect set of impacts by inducing growth in areas where our public infrastructure often can't handle it.

The Regional Transportation Plan process is legally required to be financially constrained. While the lack of adequate funding and public support constrain our ability to do more, the RCP acknowledges that more must be done beyond the conventional transportation planning process to reduce congestion, vehicle miles traveled, and increase the mobility of people and goods around the region with minimal interference. The RCP

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is founded on the premise that we need to make profound changes in the way we travel today and radically alter the way we plan our transportation system tomorrow.

Our challenges to developing transportation policies that can achieve ambitious mobility goals can be broadly divided into three categories:

- addressing demand on our transportation system from growth in population, employment and households,
- preserving, wisely utilizing, and, when necessary, expanding our infrastructure, and
- funding.

DEMAND ON OUR TRANSPORTATION SYSTEM

Each major mode in our transportation system faces challenges meeting the growth that is coming our way. If current population and employment trends continue as projected, regional traffic delay is expected to more than double to 3.6 million hours of daily delay by 2030. Travel speeds on highways will become more unpredictable and average speeds will decrease substantially. In addition to conventional passenger surface transportation, there are two other major dynamics that will continue to grow over the next 25 years and pose major challenges for the region.

Crisis in Transporting Goods. The Southern California region is facing dramatic growth in rail and truck traffic. Almost all of the short-haul and significant share of medium- and long-haul movement of goods occur by truck. Severe congestion due to truck traffic is expected to worsen in the region's major transportation corridors like the I-710 and SR-60 freeways, as the regional system will see up to 216 percent more truck trips by 2035. Containerized trade volume is expected to triple to 42.5 million Twenty-Foot Equivalent Units (TEUs) by 2030. These forecasts are capacity-constrained significantly below anticipated demand, and are based on an increase of port terminal productivity from 4,700 TEUs per acre per year currently to over 10,000 TEUs per acre per year in the future. The ability of the ports to handle this unprecedented growth in containerized cargo volumes is critical to the continued health of the local, regional, and the national economy. The challenge in address the growth in containerized cargo at the ports is compounded by traffic bottlenecks for trucks entering and leaving the port areas. Additionally, the region's intermodal rail yards are reaching capacity and causing delays in moving both international and domestic containers between rail and trucks. Our ability to accommodate the subsequent rail and truck distribution traffic will substantially drive whether we can achieve ambitious transportation goals.

Air Travel. The level of air passenger demand is forecast to double before 2035 from the current regional level of 88 million annual passengers (MAP). For every one million regional air passengers, it is estimated that there is a positive regional

economic impact of \$620 million (in 1998 dollars) and 4,475 jobs. In addition, the number of jobs created by air cargo and freight movement in the region is enormous and vital to the overall health of the regional economy. However, the increased traffic that will cross our region's roads and freeways to get to our eight commercial service airports must be addressed if we are to reduce congestion beyond current levels.

Preserving and Expanding Our Infrastructure

Every past and future investment in our transportation system creates a new, long-term commitment to operating and maintaining that infrastructure.

The region must get the most out of the current system. This is especially true for the State Highway System. Small physical improvements (e.g., auxiliary lanes that extend the merging range) and technology deployments (e.g., advanced ramp metering) offer us affordable solutions to restore some of the lost productivity due to increasing congestion. These technology deployments are often referred to as Intelligent Transportation Systems or ITS. The combination of investments reduces delays and the duration of congestion, and improves the predictability of travel time.

As for system preservation, current estimates show that our region needs \$40 billion in order to maintain our current system. However, we have a funding shortfall of over \$26 billion, meaning that most of our transportation infrastructure

is aging and will require more investment in maintenance and preservation.

In light of this inability to even maintain our existing system, the region must find ways to expand travel options for passenger and freight movement. Conventional multi-modal investments must be complemented with land use strategies, market-based initiatives, and other major, innovative programs if we are to reverse the historical trends toward increasing congestion and vehicle miles traveled.

Financial Needs

The SCAG region faces significant financial challenges to meet current transportation maintenance and operational needs for the RTP horizon, not to mention what is needed to further improve mobility and air quality in the region. Historical sources of funding such as gas taxes may be a decreasing source of revenue in light of potential shifts to other fuel sources. Public-private partnerships, user fees, and other sources of revenue must be explored if we are to find new ways to address current and future congestion.

THE PLAN

While the RCP calls for unprecedented goals and action, it recognizes that the pending 2008 Regional Transportation Plan (RTP) will make up the constrained, or funded, foundation of any more ambitious long-term plan. The pending RTP relies

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on a number of strategies to achieve more modest, constrained goals. These include an increased focus on operational, management and preservation strategies; land-use integration with transportation investments; and strategic system expansion investments.

Preservation – Protecting our Infrastructure

The Draft 2008 RTP proposes setting aside substantial funding for infrastructure preservation. However, there will remain substantial shortfalls needed to fund the \$40 billion in needs.

Operational Strategies – Getting the Most Out of Our Existing System

The RTP proposes funding for operational strategies that improve the productivity of the State Highway System through 2035. The total amount of funding represents less than one percent of the overall RTP expenditures, but is expected to produce benefits that are almost an order of magnitude higher.

Transportation Demand Management (TDM)

The RTP includes \$1.25 billion in TDM investments through 2030, with over \$900 million dedicated to non-motorized transportation improvements.

Strategic System Expansion / Capital Investments

SCAGs transportation planning proposes a balanced investment in all of the Region's modes so that the system performs at the highest level possible.

For example, the RTP includes a Strategic Arterial Improvement concept that could involve a combination of widening, signal prioritization and other Intelligent Transportation Systems (ITS) deployment and grade separation at critically high-volume intersections to enhance the flow speed and capacity of the arterial. In addition to the specific arterial improvements identified under the Smart Street Improvement Program, this Plan proposes a significant increase in funding for arterial improvements and capacity enhancements.

Strategic Growth Linked to Transportation

The RTP will continue to promote land use policies that have proved to be both regionally beneficial relative to their transportation performance, and in tune with the emerging public policy, development patterns and community needs throughout the region. Policies will include:

- Identify regional strategic areas for infill and investment
- Structure the plan on a 3-tiered system of centers development.

- Develop “complete communities” through a concentration of activities with housing, employment, and a mix of retail and services, located in close proximity to each other.
- Develop nodes on a corridor.
- Plan for additional housing and jobs near transit.
- Plan for a changing demand in types of housing.
- Continue to protect stable existing single family areas.
- Ensure adequate access to open space and preservation of habitat.
- Integrate land use to decentralized regional aviation strategy and job creation.
- Incorporate local input and feedback on future growth.

Goods Movement Strategies

In order to handle the unprecedented growth in cargo volumes in the future, the San Pedro Bay ports have implemented or are embarking on the planning and development of specific strategies to increase capacity and enhance operational efficiency in the handling of cargo, while at the same time minimizing the impacts of port goods movement activity on the environment and public health. Some of these strategies that will play a key role in allowing the ports to realize their full potential in supporting the growth in cargo include the following:

- On-dock Rail Capacity Enhancements,
- PierPass Off-peak Program,
- Virtual Container Yards, and
- Port Clean Air Action Plan Strategies

Looking beyond the ports to the freight distribution network, the RTP will include strategies to facilitate truck movement including:

- Truck Climbing Lanes,
- Dedicated Truck Lanes, and
- Truck Emission Control Strategies

SCAG's RTP also proposes rail system capacity enhancements that replace truck traffic, including, rail grade separations, and exploring alternative methodologies to reduce rail emissions. These strategies include:

- Near Dock Intermodal Yard Capacity Enhancements,
- Rail Mainline Capacity Improvements,
- Rail Grade Separations, and
- Locomotive Engine Upgrades

Finally, Inland Ports and related initiatives have been proposed as solutions to freight mobility issues that cannot be addressed



by straightforward capacity increases. The broad potential benefits of an inland port include facilitating goods movement, encouraging economic development, reducing traffic congestion, and promoting the regional objectives.

High Speed Rail Transport System

The HSRT system comprises a long-term vision connecting the region's ports, airports, and urban activity centers. The system can be constructed in multiple stages that can each be financially viable. The financial performance will be enhanced as the system is extended in connectivity throughout the region and the volume of users increases.

Aviation

SCAG's Regional Aviation Strategy would accommodate a total regional passenger aviation demand of 170 million annual passengers (MAP). Under the Strategy, rather than relying on expanding existing urban airports, the future demand for air travel will be largely served by using available capacity at airfields located in the Inland Empire and north Los Angeles County where projected population growth will be best served. This plan calls for constraining the LAX to its estimated existing physical capacity of 78 MAP, increasing the Ontario International Airport to 30 MAP, and a new passenger airport at Palmdale that will accommodate 12.8 MAP.

Cooperation between airport authorities is necessary to ensure efficient usage of capacity. Cooperation between airports would be accomplished through the integration of airport master plans, and the development of memoranda of understanding and contractual agreements between airports. These agreements would also identify complementary roles and market niches between airports to increase synergy in the system and maximize utilization of available airport capacities throughout the region. For example, Los Angeles World Airports would play a key role in integrating master plans for the three airports it operates, namely LAX, Ontario and Palmdale.

Airport Ground Access

The Regional Aviation Strategy will have localized ground access impacts at a number of airports. Particularly, the Regional Aviation Strategy will result in dramatic increases in airport activities (people as well as cargo) at Ontario, Palmdale and a number of other airports. A number of freeway and arterial improvements and transit strategies are proposed in SCAG's RTP to address the ground access issues as part of the overall transportation investment in the Region.

BEYOND THE RTP

It is recognized that beyond the constraints of the RTP, more should be done to reduce VMT, congestion and improve air quality. Whatever strategies are considered, it is likely they would require extensive collaboration and cooperation with

local, state and federal governments. One example may be market based incentives, such as (but not limited to) High Occupancy Toll Lanes or congestion pricing.

Increased use of such market based incentives and dis-incentives should be studied for effectiveness on achieving transportation and air quality goals, as well as potential economic and social impacts.

The Draft RCP's strategic initiatives reflect broad categories of ideas that will be refined through completion of the pending 2008 RTP. Specifically, development of the RTP's Strategic Plan will help refine this Plan's strategic initiatives.

TRANSPORTATION GOALS

- A more efficient transportation system that reduces and better manages vehicle activity.
- A cleaner transportation system that minimizes air quality impacts and is energy efficient.

TRANSPORTATION OUTCOMES

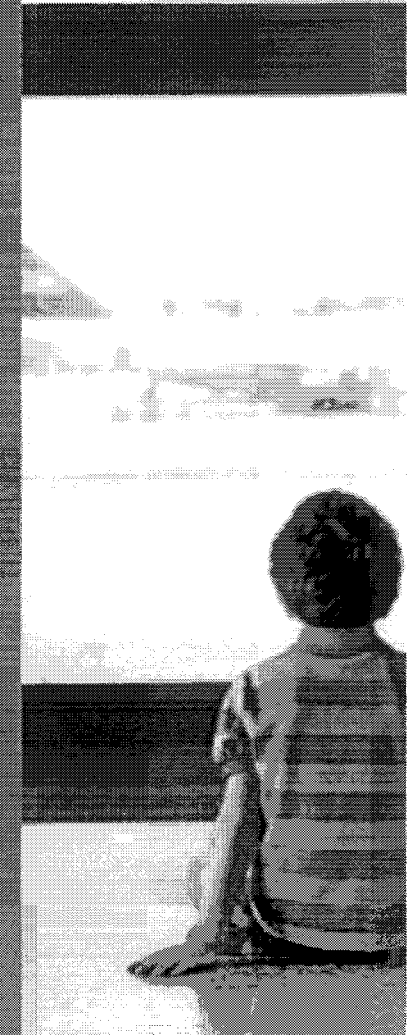
- Reduce the region's vehicle miles traveled from all vehicles and from carbon-based fueled vehicles to 1990 levels by 2020.

- Reduce the region's use of gasoline and diesel fuel from on-road vehicles to 1990 levels by 2020, including accelerating the penetration of vehicles fueled by fuel cells or other non-petroleum based engine technologies.

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TRANSPORTATION

TRANSPORTATION ACTION PLAN

Transport Practices	Legislation	Coordination	Constrained Policies	Potential for Direct/Indirect Benefits										Other Benefits	
				Land Use	Transportation	Air Quality	Water	Energy	Open Space	Economy	Security	Solid Waste	Public Health	Climate Change	
SCAG Policies (SCAG policies shall be subject to consideration for future Overall Work Plans)															
			TR-1 SCAG shall ensure that transportation investments are based on SCAG's adopted Regional Performance Indicators.	X	X	X		X		X	X		X	X	
			TR-2 SCAG shall ensure safety, adequate maintenance, and efficiency of operations on the existing multi-modal transportation system will be RTP priorities and will be balanced against the need for system expansion investments.	X	X	X		X		X			X	X	
		X	TR-3 SCAG shall develop a collaborative implementation program that identifies required actions and policies for RTP land use and growth strategies that differ from expected trends.	X	X	X		X	X	X		X	X	X	
			TR-4 SCAG shall support and encourage High Occupancy Vehicle gap closures that significantly increase transit and rideshare usage.		X	X		X					X	X	
			TR-5 SCAG shall monitor progress of the RTP, including timely implementation of projects, programs, and strategies.		X								X		
		X	TR-6 SCAG shall address SAFETEA-LU requirements that call for improved safety planning and consultation with environmental and natural resource stakeholders when considering transportation funding plans, programs, and projects.	X	X	X	X	X	X	X	X	X	X	X	

ICP/Best Practices	Legislation	Coordination	Strategic Initiatives	Potential for Direct/Indirect Benefits										Other Benefits	
				Land Use	Transportation	Air Quality	Water	Energy	Open Space	Economy	Security	Solid Waste	Public Health	Climate Change	
SCAG Initiatives (SCAG initiatives shall be subject to consideration for future Overall Work Plans)															
X		X	TRSI-1 SCAG, transportation commissions, local governments, and other project proponents should use the Compass Blueprint to influence the funding of future transportation planning and investments.	X	X	X		X	X	X			X	X	
X		X	TRSI-2 SCAG shall help coordinate regional, State, and federal consensus on how to address the additional strategic investments and technological breakthroughs necessary to meet mobility and air quality goals.	X	X	X		X		X		X	X	X	
X	X	X	TRSI-3 Beyond the RTP, SCAG shall study the effectiveness of market based incentives and disincentives that can be used separately or in conjunction with each other in order to reduce VMT.		X	X		X	X	X			X	X	



Security and Emergency Preparedness

THE CHALLENGE

Southern California is home to significant threats; including earthquakes, tsunamis, wildfires, flooding and mudslides. More recently, terrorism has been added to the threats that the region must prepare against. The complexity of the SCAG region, with a range of potential terrorism targets, presents significant challenges in coordinating and implementing effective homeland security programs. The unexpected and complex nature of these natural and human-caused incidents require extensive coordination, collaboration and flexibility among all of the agencies and organizations involved in planning, mitigation, response and recovery. It should be noted that **safety** is defined as the protection of persons and property from unintentional damage or destruction caused by accidental or natural events. **Security** is defined as the protection of persons or property from intentional damage or destruction caused by vandalism, criminal activity or terrorist attacks. The Transportation Research Board has classified emergency events that affect transportation agencies into several categories, which is illustrated below in Table 9.1.

The interdependency of the jurisdictions and organizations makes regional cooperation and coordination essential to security and emergency preparedness. No significant event is

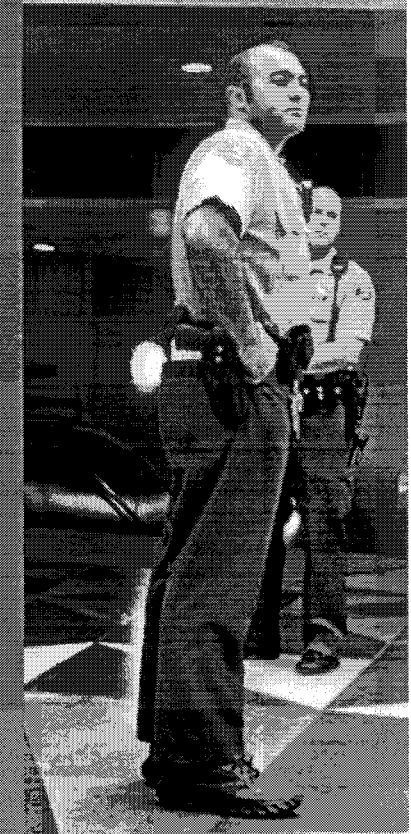
truly local, as political boundaries are permeable and critical local infrastructure may serve the entire region. No jurisdiction stands alone. A high-risk, well-resourced municipality may be as dependent on a smaller jurisdiction for support in an emergency as a smaller jurisdiction may be on a larger one. Typically, no single agency is responsible for transportation security. At the local level, especially within transit agencies, safety may be handled within one office. However, it is far less likely that the security of a surface transportation mode is managed by one entity and that this entity is even controlled by the transportation organization. For example, highways and transit networks traverse multiple police jurisdictions, local fire departments generally fill the incident command role after terrorist events, regional command and control centers respond to both natural and intentional disasters, and federal agencies intervene as needed and based on specific guidelines such as the crossing of state boundaries.

A proactive region that improves its homeland security programs and prepares for emergencies is better insulated against the economic, public health, transportation, and other impacts from natural and human-caused accidents. When a disaster occurs, there is a cascading effect on the transportation, utilities, communications, fuel, and water infrastructure services

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REGIONAL COMPREHENSIVE PLAN

Red Line



and delivery systems that we depend on. When one of these critical elements in our support system breaks down, it has a domino effect on other elements. When multiple elements break down, the effect can be crippling. Some of the ways in which the infrastructure can be affected in a disaster or emergency and effects on emergency service providers are shown in Tables 9.2 and 9.3.

A continuing, cooperative and collective regional effort will be needed to assist the region in the planning, preparation and response to emergencies, whether caused by natural or human elements. To assist in this effort, this chapter identifies SCAG's potential role and responsibility in regards to the

relationship between transportation and emergency preparedness. It describes the current programs at the federal, State and local levels; identifies security issues in the transportation infrastructure; and recommends policies for SCAG and other stakeholders.

The continued emphasis on enhancing transportation security is also reflected in the most recent transportation authorization bill, known as SAFETEA-LU (Safe, Accountable, Flexible, Efficient Transportation Equity Act – A Legacy for Users). SAFETEA-LU specifies that Metropolitan Planning Organizations (MPO) such as SCAG develop a metropolitan planning process that provides consideration for projects and

TABLE 9.1 EMERGENCY EVENTS IMPACTING TRANSPORTATION AGENCIES¹

Naturally Occurring	Human Caused	
	Intentional	Non-Intentional
Droughts Dust/Wind Storms Earthquakes Electrical Storms Floods High Winds Hurricanes Ice Storms Landslides Naturally Occurring Epidemics Snowstorms and Blizzards Tornadoes Tropical Storms Tsunamis Wildfires	Bomb Threats and Other Threats of Violence Disruption of Supply Sources Fire/Arson Fraud/Embezzlement Labor Disputes/Strikes Misuse of Resources Riot/Civil Disorder Sabotage: External and Internal Actors Security Breaches Terrorist Assaults Using Chemical, Biological, Radiological, or Nuclear Agents Terrorist Assaults Using Explosives, Firearms, or Conventional Weapons Theft Vandalism War Workplace Violence Cyber Attacks	Accidental Contamination or Hazardous Materials Spills Accidental Damage to or Destruction of Physical Plant and Assets Accidents That Affect the Transportation System Gas Outages Human Errors HVAC System Failures or Malfunctions Inappropriate Training on Emergency Procedures Power Outages Software/Hardware Failures or Malfunctions Unavailability of Key Personnel Uninterruptible Power Supply (UPS) Failure or Malfunction Voice and Data Telecommunications Failures or Malfunctions Water Outages

strategies that will “increase the security of the transportation system for motorized and non-motorized users.”

THE PLAN

This chapter of the RCP aims to achieve and sustain risk-based target levels of capability to prevent, protect against, respond to, and recover from major human- caused or natural events in order to minimize the threat and impact to lives, property and the regional economy. This centers around coordinating the numerous plans, programs, organizations and infrastructure in place within the SCAG region to provide safety and security of the regional transportation system for many potential situations.

SCAG’s role in homeland security is based on the potential role of a MPO in relationship to six phases of an incident/ disaster:²

- **Prevention:** Stopping an attack before it occurs; improved facility design; surveillance, monitoring
- **Response/Mitigation:** Reducing impacts of an attack; evacuation; identifying best routes; effective communication system
- **Monitoring:** Monitoring and evaluating incidents; surveillance, monitoring, sensing, public information
- **Recovery:** Facilitating and reconstruction, restoring operation of transportation system
- **Investigation:** Determination of causes, and responsible parties; security/police activity
- **Institutional Learning:** Self-assessment of actions; feedback to prevention element

TABLE 9.2 POSSIBLE EFFECTS OF DAMAGE TO INFRASTRUCTURE³

Service	Effect
Transportation	Inability to get emergency service personnel into the affected area. Inability to transport victims away from the area.
Electrical	Increased risk of fire and electrical shock. Possible disruption to transportation system if downed lines are across roads.
Telephone	Lost contact between victims, service providers, and family members. System overload due to calls from or to friends or relatives.
Water	Disruption of service to homes, businesses, and medical providers. Inadequate water supply for firefighting. Increased risk to public health if there is extensive damage to the water supply or if it becomes contaminated.
Fuel Supplies	Increased risk of fire or explosion from ruptured fuel lines. Risk of asphyxiation from natural gas leaks in confined areas.

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REGIONAL COMPREHENSIVE PLAN



Because of its traditional role as the MPO for the six-county Southern California region, SCAG is best suited to provide a forum where plans and data can be developed and coordinated with other regional planning efforts; and work towards developing regional consensus, but not be responsible for operation and implementation of plans and programs. SCAG should play a lead role in some areas, a minor role in others, or play no role at all. For example, SCAG has almost no role in the investigation aspect of security, only a minor role; as champion, in the recovery phase; but should play a lead role in championing and convening prevention and developing the institutional learning. SCAG could play a significant role in helping the region coordinate planning in preparation and anticipation of

potential future incidents; and coordinate public information dissemination strategies.

This enhanced leadership and data provision role is designed to support federal, state and local security and emergency responders. The RCP proposes that SCAG coordinate more with these front-line responders to ensure that planning and information are available to help the region deal with inevitable emergencies.

The recommended policies of this plan are also designed to urge transportation planning agencies to devote adequate funding to the operations and maintenance of our aging transportation system. Failing infrastructure is often the result of insufficient roadway, bridge, and transit system maintenance due to lack

TABLE 9.3 POSSIBLE EFFECTS OF DAMAGE ON EMERGENCY SERVICE PROVIDERS³

Type of Damage	Effect
Roadways, Bridges, Tunnels, Interchanges	Inability to assess damage accurately. Ambulances prevented from reaching victims and/or victims prevented from reaching emergency medical services. Police prevented from reaching areas of civil unrest. Fire departments prevented from getting to fires. Flow of needed supplies is interrupted. Inability to deploy assets as part of incident response and to manage transportation flows Inability for emergency service providers to manage an evacuation
Structural	Damaged hospitals unable to receive patients. Increased risk of damage from falling debris.
Disrupted Communication	Victims unable to call for help. Coordination of services is hampered. Inability for incident command structure to receive real time situational information, reducing its effectiveness
Fuel Line Damage	Fire and paramedic services overburdened. Inability to sustain emergency response and recovery
Disrupted Water Service	Firefighting capabilities restricted. Medical facilities hampered.

of funding or other resources. While not as glamorous as earmarking funding for roadway and transit system expansions, our region must improve its commitment to ensuring that the existing transportation system is safe and secure from natural and man-made incidents. To that end, the RCP recommends that SCAG work with partner agencies, federal, state and local jurisdictions to find opportunities to leverage and effectively utilize transportation and public safety/security resources in support of this effort.

Table 9.4 highlights SCAG's role in responding to specific threats to the region.

Earthquakes. The most likely threat to the region is one we have faced many times in varying severity, the earthquake. The 1971 Sylmar earthquake and the 1994 Northridge trembler caused significant transportation damages to the region. An even greater earthquake in the SCAG region is not just a statistical possibility, but a certainty.

TABLE 9.4 SCAG'S ROLE IN SECURITY AND EMERGENCY PREPAREDNESS

Incident Phase	Traditional	Convener	Champion	Developer	Operator
Prevention	•	☑	☑	•	☒
Response/Mitigation	•	☑	☑	•	•
Monitoring/Information	•	☑	☑	•	☒
Recovery	•	☑	•	☒	☒
Investigation	•	☒	☒	☒	☒
Institutional Learning	☑	☑	☑	☑	☑

No Role ☒

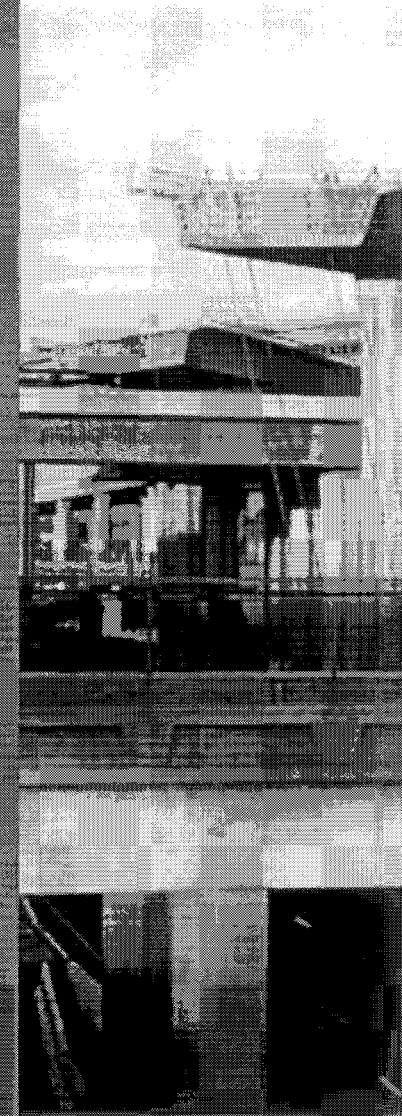
Minor Role •

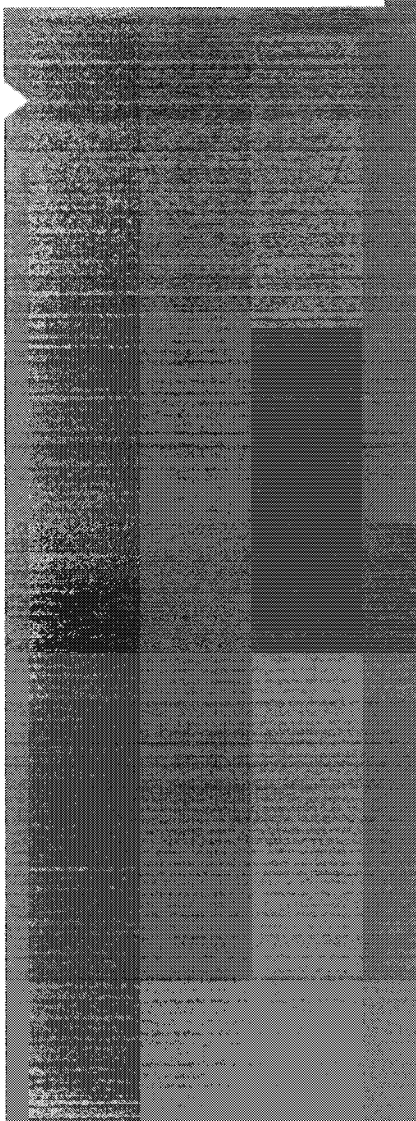
Lead Role ☑

Roles	
Traditional	Help manage the system management and operations role in the ongoing transportation planning activities. The primary responsibility for projects rests elsewhere.
Convener	The MPO acts as a forum where operations plans can be discussed and coordinated with other plans in the region, still not responsible for operation and implementation.
Champion	The MPO works aggressively to develop regional consensus on operations planning. MPO planners develop programs and projects and the MPO takes the lead in developing regional agreements on coordinated operations.
Developer	MPO develops regional operation plans and incorporates operations strategies into the transportation plan. System-oriented performance measures would be used to identify strategic operations gaps in the transportation system.
Operator	The MPO would be responsible for implementing operations strategies that were developed as part of the MPO-led planning process.

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REGIONAL COMPREHENSIVE PLAN





SCAG's role in an earthquake would be based on the severity of the earthquake. For smaller earthquakes, SCAG would work with local agencies to program transportation infrastructure repairs.

For moderate earthquakes, SCAG would work with the State and federal government to "fast track" the programming of transportation infrastructure repairs.

For significant earthquakes, SCAG would provide GeoData to responders to help identify transit dependent areas for rescue and evacuation, and critical transportation infrastructure that would need to be repaired to most efficiently help in the relief and recovery efforts. SCAG should maintain mutual aid agreements with other metropolitan areas in the event the organization is disabled by the event, maintaining the flow of data to responders.

There is a danger that an earthquake or series of earthquakes may cause water retention facilities to fail. Dam owners are required by California Regulations to provide a technical study and an inundation map, showing the area downstream of a dam that would be inundated or otherwise affected by the failure of the dam and accompanying large flood flows.

Based upon a review of inundation maps or based upon information gained by an on-site inspection and consultation with the affected local jurisdiction (when the requirement for an inundation map is waived), the Office of Emergency Services shall determine and designate areas where death or personal

injury would, likely result from the partial or total failure of a dam. The appropriate public safety agencies of any city, county, or city and county, the territory of which includes any of those areas, may adopt emergency procedures for the evacuation and control of populated areas below those dams.⁴

Tsunamis. Tsunamis, while less frequent than earthquakes, have happened in the past, and will likely happen in the future. An August 31, 1930 tsunami resulted in a three meter run-up (maximum vertical elevation wave reached above sea level at the time of tsunami) wave observed in Santa Monica bay. One man drowned and several swimmers required rescuing.

Even small tsunamis can be dangerous, producing dangerous undertows that can drown swimmers, rip ships from their moorings and damage low lying structures.

While development along the coast would be affected, based on the size of the waves, the greatest threatened areas would be the ports of Long Beach (POLB) and Los Angeles (POLA), which have a dock height of only a few feet above the high tide line.

The major sources of tsunami energy reaching the POLA and the POLB are from the northern regions offshore of Alaska and from southern regions near Chile. Tsunamis from great earthquakes in the Far East do not appear to impact the Ports as much as those from generation regions in the north and the south.⁵

In the event of a tsunami, SCAG would work with the State and Federal government to “fast track” the programming of transportation infrastructure repairs.

Flooding. Much of the SCAG region is composed of alluvial fans, gently sloping landforms created over time from the erosion of the surrounding mountains. Flooding, even though characterized by shallow depth, can be quite destructive, traveling at relatively high speed and carrying sediment and debris.

In 1938, after a tremendous flood that killed 113 people, the Army Corps of Engineers began channelizing the major rivers in Los Angeles County, developing six catch basins and 14 smaller mountain dams in an effort to reduce flooding. While flooding has not been eliminated, the impacts in urban areas of Los Angeles County have been reduced.

Since then, the regional population has grown significantly into the Inland Empire and North Los Angeles County. Many of the alluvial floodplains in these areas have been developed, primarily with residential housing. Droughts and wildfires increase the risk of flash floods and mudslides during rain storms.

The combination of damaged hillsides, alluvial fans and inclement weather allow some degree of accuracy in predicting danger areas for flooding, allowing precautionary evacuations and road closures.

In the event that flooding damages transportation infrastructure, SCAG would work with the State and federal government to “fast track” the programming of transportation infrastructure repairs.

Security and Emergency Preparedness Goals

- Ensure transportation safety, security, and reliability for all people and goods in the region.
- Prevent, protect, respond to, and recover from major human-caused or natural events in order to minimize the threat and impact to lives, property, the transportation network and the regional economy.

Security and Emergency Preparedness Outcomes

- Increase per capita funding by 2012 for transportation system maintenance and preservation programs over 2007 levels.
- Increase per capita funding for Intelligent Transportation Systems projects that enhance or benefit regional transportation security.
- 100 percent of government agencies and organizations involved in planning, mitigation, response and recovery involved in improving emergency preparedness coordination, collaboration and flexibility.



SECURITY AND EMERGENCY
PREPAREDNESS

SECURITY AND EMERGENCY PREPAREDNESS ACTION PLAN

ISG/Best Practices	Legislation	Coordination	Constrained Policies	Potential for Direct/Indirect Benefits										Other Benefits	
				Land Use	Transportation	Air Quality	Water	Energy	Open Space	Economy	Security	Solid Waste	Public Health	Climate Change	
SCAG Policies (SCAG policies shall be subject to consideration for future Overall Work Plans)															
		X	SEP-1 SCAG shall help ensure the rapid repair of transportation infrastructure in the event of an emergency.		X						X	X		X	
		X	SEP-1.1 SCAG, in cooperation with local and state agencies, shall identify critical infrastructure needs necessary for: a) emergency responders to enter the region, b) evacuation of affected facilities, and c) restoration of utilities.		X		X	X			X	X		X	
		X	SEP-1.2 SCAG, in cooperation with CTCs, California and the federal Government, shall develop a transportation recovery plan for the emergency awarding of contracts to rapidly and efficiently repair damaged infrastructure.		X						X	X			
		X	SEP-2 SCAG shall continue to deploy and promote the use of intelligent transportation system (ITS) technologies that enhance transportation security and reduce air pollution.		X	X		X			X	X		X	
		X	SEP-2.1 SCAG shall work to expand the use of ITS to improve surveillance, monitoring and distress notification systems and to assist in the rapid evacuation of disaster areas.		X							X			
		X	SEP-2.2 SCAG shall incorporate security into the Regional ITS Architecture.		X							X			
X			SEP-3 SCAG shall establish transportation infrastructure practices that promote and enhance security.		X							X			
X			SEP-3.1 SCAG shall work with transportation operators to plan and coordinate transportation projects, as appropriate, with Department of Homeland Security grant projects, to enhance the regional transit security strategy (RTSS).		X							X		X	
X			SEP-3.2 SCAG shall encourage transportation infrastructure practices that identify and prioritize the design, retrofit, hardening, and stabilization of critical transportation infrastructure to prevent failure, to minimize loss of life and property, injuries, and avoid long term economic disruption.		X						X	X		X	
		X	SEP-3.3 SCAG shall establish a Transportation Security Working Group (TSWG) with goals of RTP consistency with RTSS, and to find ways SCAG programs can enhance RTSS.		X							X		X	
		X	SEP-4 SCAG shall establish a forum where policy makers can be educated and regional policy can be developed.									X			
		X	SEP-4.1 SCAG shall work with local officials to develop regional consensus on regional transportation safety, security, and safety-security policies.									X			

TGR Best Practices	Legislation	Coordination	Constrained Policies	Potential for Direct/Indirect Benefits										Other Benefits	
				Land Use	Transportation	Air Quality	Water	Energy	Open Space	Economy	Security	Solid Waste	Public Health	Climate Change	
		X	SEP-5 SCAG shall help to enhance the region's ability to deter and respond to acts of terrorism, human-made or natural disasters through regionally cooperative and collaborative strategies by:								X				
		X	SEP-5.1 Working with local officials to develop regional consensus on regional transportation safety, security, and safety-security policies.								X				
		X	SEP-6 SCAG shall help to enhance the region's ability to deter and respond to terrorist incidents, human-made or natural disasters by strengthening relationship and coordination with transportation.	X							X				
		X	SEP-6.1 SCAG shall encourage all SCAG elected officials are educated in the National Incident Management System (NIMS).								X				
		X	SEP-6.2 SCAG shall work with partner agencies, federal, state and local jurisdictions to improve communications and interoperability and to find opportunities to leverage and effectively utilize transportation and public safety/security resources in support of this effort.	X							X				
		X	SEP-7 SCAG shall work to enhance emergency preparedness awareness among public agencies and with the public at-large.								X				
		X	SEP-8 SCAG shall work to improve the effectiveness of regional plans by maximizing the sharing and coordination of resources that would allow for proper response by public agencies by:								X				
		X	SEP-8.1 Encouraging and providing a forum for local jurisdictions to develop mutual aid agreements for essential government services during any incident recovery, particularly for those issues that are multi-county.								X				
		X	SEP-9 SCAG shall help to enhance the capabilities of local and regional organizations, including first responders, through provision and sharing of information by:								X		X		
		X	SEP-9.1 Working with local agencies to collect regional GeoData in a common format, and provide access to the GeoData for emergency planning, training and response.	X	X	X	X	X	X	X	X	X	X		
		X	SEP-9.2 Establishing a forum for cooperation and coordination of these plans and programs among the regional partners including first responders and operations agencies.								X				
		X	SEP-9.3 Developing and establishing a regional information sharing strategy, linking SCAG and its member jurisdictions for ongoing sharing and provision of information pertaining to the region's transportation system and other critical infrastructure.	X	X	X	X	X	X	X	X	X	X	X	X
		X	SEP-10 SCAG shall provide the means for collaboration in planning, communication, and information-sharing before, during, or after a regional emergency by:								X		X		

**SECURITY AND EMERGENCY
PREPAREDNESS**

Best Practices	Legislation	Coordination	Constrained Policies	Potential for Direct/Indirect Benefits										Other Benefits	
				Land Use	Transportation	Air Quality	Water	Energy	Open Space	Economy	Security	Solid Waste	Public Health	Climate Change	
X			SEP-10.1 Developing and incorporating strategies and actions pertaining to response and prevention of security incidents and events as part of the ongoing regional planning activities.								X				
		X	SEP-10.2 Offering a regional repository of GIS data for use by local agencies in emergency planning, and response, in a standardized format.	X	X	X	X	X	X	X	X	X	X	X	
		X	SEP-10.3 Entering into mutual aid agreements with other MPOs to provide data sharing in the event that SCAG is no longer able to function due to an incident.								X				

Footnotes

- ¹ National Cooperative Highway Research Program Report 525 Volume 9 "Guidelines for Transportation Emergency Training Exercises" McCormick Taylor Inc. 2006
- ² Michael D. Meyer, Ph.D, P.E., Georgia Institute of Technology: The Role of the Metropolitan Planning Organization (MPO) in Preparing for Security Incidents and Transportation System Response.
- ³ Federal Emergency Management Agency: Community Emergency Response Team (IG-317) Student's Guide
- ⁴ California Government Code Section 8589.5
- ⁵ Tsunami Hazard Assessment For The Ports Of Long Beach And Los Angeles, (Moffatt and Nichol) 1997. http://www.portoflosangeles.org/DOC/REPORT_Tsunami_%20April_2007.pdf

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REGIONAL COMPREHENSIVE PLAN

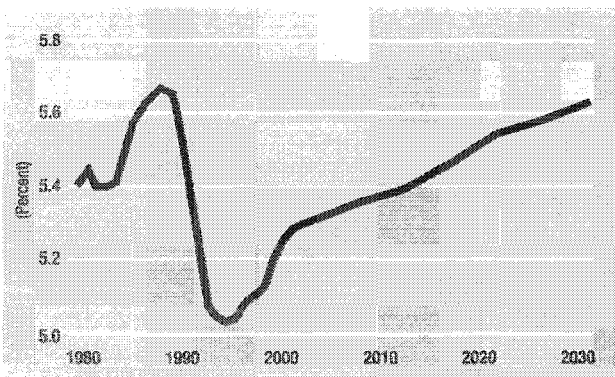


Economy

THE CHALLENGE

While the SCAG region has a strong economic base with several sectors poised for growth in jobs and wages, policy intervention can help to ensure that the regional economy grows in the quantity and quality of jobs. Specifically, the region's challenge is to add a projected three million jobs between 2005 and 2035. The projected job growth needs to provide a wide range of job opportunities for residents while requiring additional workers at all skill levels.

FIGURE 10.1
SCAG Region Share of U.S. Jobs



Current projections indicate that the SCAG region should enjoy job growth faster than the national growth rate (Figure 10.1). While the region experienced a severe recession in the

1990's led by downturns in aerospace and construction jobs that dropped the region's share of U.S. jobs from 5.7 percent in 1990 to 5.0 percent in 1995, the SCAG region has outpaced the nation in job growth since 1995. By 2005, the region's share of U.S. jobs rose steadily to 5.3 percent.

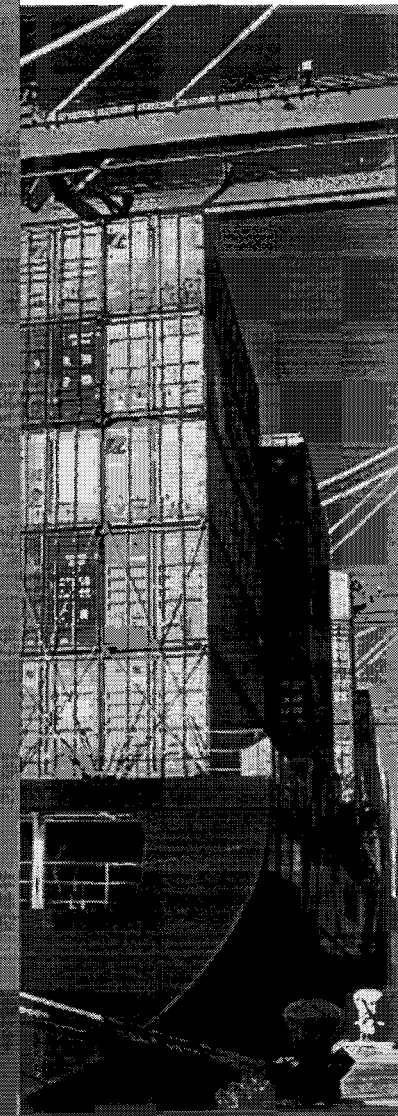
Jobs in the region are projected to continue to increase faster than the national growth rate and by 2035 the SCAG region is projected to capture 5.6 percent of U.S. jobs, still slightly below the high level of 1990.

Sectors like international trade; architectural and design services; tourism and entertainment; technology and the nation's largest manufacturing complex give the region a good head start on developing a prosperous economy over the next 30 years.

However, the projected job and income growth will not come automatically. Economic growth and the chance for broadly shared prosperity depend on meeting a number of substantial economic challenges.

Improving the Economic Competitiveness of Key Sectors

In this increasing globalized economy, regions compete for the location of industries that export goods and services across not only their own country but around the world. The SCAG



THE GREEN ECONOMY

Environmental quality and economic growth can go hand in hand. Promoting clean energy and jobs has been found to have a positive impact on the economy and individual pocketbooks as is illustrated in the following studies.

A study by the Economic Policy Institute found that a policy package including development of new energy-efficient and renewable energy technologies, transitional assistance to compensate any workers and communities harmed by the policies, and a modest carbon/energy tax would reduce U.S. carbon emissions by 27% in 2010 and 50% in 2020 and increase GDP by a modest 0.24% in 2010 and by 0.6% in 2020, and add an additional 660,000 jobs in 2010 and 1.4 million in 2020.¹

In addition, a report, "Economic Growth and Greenhouse Gas Mitigation in California," offers an independent assessment of

region faces challenges in providing the infrastructure to support local, national, and international goods movement as well as providing for the mobility needs for the rest of the economy. Such investments must also occur within a context of environmental quality, justice and respect for local communities.

Moreover, the region must increase its share of employment in those industries and service sectors where wages and salaries will be higher than average and where growth, nationwide and internationally, is expected to be strong (e.g. professional, business and information services, wholesale trade and transportation services, tourism and entertainment sectors, and high technology and green technology sectors). It should also include industries with a defined career ladder that do not necessarily require advanced education (e.g. logistics). At the same time that it pursues growth in these sectors, the region must maintain a sufficiently diverse economic base overall and sufficient local, self-reliance, so as to protect against over-dependence upon any few industries or income streams and help insulate the regional economy from global downturns.

Education and Workforce Challenges

A skilled workforce is fundamental for turning economic opportunities into successful outcomes for residents and the region. Attracting, retaining, educating and training a diverse, skilled labor force has become an increasingly important objective for regional economies. The ability to attract workers (and firms) is dependent upon the livability and quality of life

for the region, its business climate, and working conditions. Investments in these areas are critical for the SCAG region. The region is facing a draft shift in its labor force as the baby boomers retire and are replaced, in large part by immigrants and their children and grandchildren, many of whom come with a relatively lower level of educational achievement than much of the region's existing labor force. Improvement of the region's educational system as well as training opportunities for adult workers is critical.

Economic Growth Must be Consistent With Regional Environmental, Health, Mobility and Social Justice Goals

International trade can create good job opportunities and raise real income levels for the SCAG region. Significant investment is necessary to improve the efficiency and capacity of the region's goods movement infrastructure if we are to benefit from the growth in international trade expected, while remaining globally competitive. Such changes must also occur within a context of environmental quality (see inset box "The Green Economy"), environmental justice and respect for local communities.

Needed improvements in the region's goods movement infrastructure depend upon cooperation between government and the private sector. Public investment and planning can play a strong role in attracting needed additional private investment. At the same time, improvements to the system should not

come at the expense of other transportation system investments, nor should they be only the burden of local, regional or state governments.

Given current limits on local and state finances, innovative methods will be needed to procure and pay for these system improvements. Both the federal and State governments must act to support innovative procurement and public-private funding mechanisms, and should take legislative action to allow the region to pursue innovative funding strategies. The national purpose served by Southern California's goods movement system also points to the need for strong federal participation in assisting the region with the substantial local burdens it bears in serving this role - including traffic congestion, air pollution, noise, public health impacts, visual blight, and freight-related safety incidents. These burdens are not compensated, thus forming an effective subsidy for lower-priced goods in other states. The federal government should explore ways to compensate the region for the services it provides.

Quality of Life

Quality of life is an economic competitiveness challenge, as our ability to improve mobility, air quality and housing will influence and be influenced by the economy. Recent trends in housing prices and affordability raise serious challenges for the region in attracting and retaining industries that offer good jobs. Although housing is discussed extensively elsewhere in the Regional Comprehensive Plan, it is important to remem-

ber that housing, particularly the lack of diversified options, is a challenge to future regional prosperity.

Strengthening Local Self-Reliance

A major challenge for the region is to maintain and strengthen local-self reliance while recognizing the need to diversify the region's economy and expand Southern California's role in the global economy. Our ability to create jobs and produce goods locally that serve the needs of our six-county region can only enhance the long-term sustainability of an economy that doesn't have to import all of its needs. The environmental and economic costs of transport alone can temper the trend toward farming out jobs and importing goods from cheaper manufacturing centers outside the region and country. However, finding a healthy balance between self-reliance and strategic participation in the global economic marketplace will be a key challenge for Southern California.

THE PLAN

The RCP is built on the notion that our region needs to grow by balancing economic prosperity with environmental protection and local quality of life goals. To that end, the RCP recommends policies that promote mutually supportive economic development strategies, land use decisions, transportation investments, and educational improvements. These include:

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THE GREEN ECONOMY

the economic impacts of AB 32. This study conducted by the University of California, Berkeley, and delivered to the state legislature on August 16, 2006, found that returning California greenhouse gas emissions to 1990 levels by 2020, as identified in AB 32, can boost the annual Gross State Product (GSP) by \$60 billion and create 17,000 new jobs by 2020. The study found that the gains could be up to \$74 billion in annual GSP and 89,000 new jobs by 2020 - if climate policies are designed to create direct incentives for California companies to invest in new technology.²

- Focusing development in urban centers, existing cities and along (existing and future) transportation corridors
- Providing housing to meet the needs of all income levels
- Locating new housing near existing jobs and new jobs near existing housing
- Designing/building 'green' to save resources, reduce costs and increase competitiveness
- Identifying and addressing issues related to environmental justice in the formulation of policies and plans as required in Title VI of the Civil Rights Act of 1964, President Clinton's 1994 Executive Order 12898, and related DOT and FHWA Orders
- Strengthening local self-reliant industries that provide jobs and goods for our region's needs
- Developing a well-educated work force
- Fiscal and governmental policies that support these approaches

This comprehensive strategy prioritizes the notion that local businesses must be profitable and competitive regionally, nationally and internationally. However, it also addresses the physical, economic, environmental and human capital dimensions. For example, it recognizes the need to alleviate poverty

and meet the basic needs of all who participate in our economy. In addition, such a strategic vision will only succeed if government agencies, the private sector, non-profit organizations and the region's residents embrace it. Only with the participation and cooperation of all the region's stakeholders will this vision be realized.

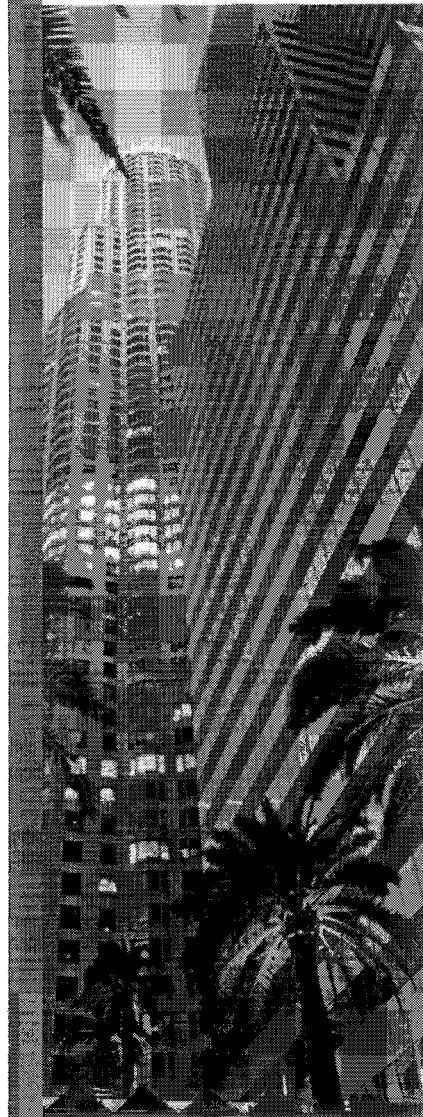
ECONOMY GOALS

- Position the SCAG region and its economy to seize opportunities and address challenges that will enhance the region's mobility, livability, prosperity, and sustainability.
- Enable business to be profitable and competitive (locally, regionally, nationally, and internationally).
- Promote an economy that rewards hard work, perseverance, and ingenuity to allow individuals and families to achieve a better quality of life.
- Ensure that the maximum possible number of residents participate in the growth of prosperity in the SCAG region. (Note that a goal of broadly shared prosperity does not imply a strategy of redistributing today's income. Strategies to ensure that future economic gains are broadly distributed are based, by contrast, on expanding opportunity and the commitment of business and government leaders to recognize that individuals and communities left behind today must be made full partners in the growth of tomorrow's economy.)

- Promote sustained economic health through diversifying the region's economy, strengthening local self-reliance and expanding competitiveness.
- Ensure a healthy, flourishing economy that provides sufficient employment opportunities to decrease poverty and meet the basic needs of all the people who participate in our economy by:
 - Promoting education and workforce training policies that give residents an opportunity to compete for the full range of jobs available with good wages and benefits;
 - Encouraging and enabling charities and non-profits to help provide for the poorest in our region;
 - Achieving economic development while being consistent with the region's sustainability goals for land use, air quality, and other resource areas; and
 - Accomplishing this within an ecological and sustainable context that uses resources wisely.

ECONOMY OUTCOMES

- Increase job growth to add three million jobs to the regional economy by 2035.
- Eliminate gaps in educational achievement between different racial and ethnic groups.
- Increase the real per capita income to restore 1997 levels of household and individual purchasing power.
- Expand green technologies and related employment in green technologies and services above and beyond what is needed to meet Title 24 requirements by 2035.
- Increase the region's economic vitality and attractiveness by focusing housing and job additions in urban centers, employment centers, and transportation corridors, such that there will be a minimum of 35 percent of the region's household growth and 32 percent of employment growth in these areas from their levels in 2005 by 2035.
- Increase the affordability of health care by 50 percent to reduce losses in productivity resulting from inaccessible health care.
- Promote sustained economic health through diversifying the region's economy, strengthening local self-reliance and expanding global competitiveness.



ECONOMY

ECONOMY ACTION PLAN

Goal/Best Practices	Legislation	Coordination	Constrained Policies	Potential for Direct/Indirect Benefits									Other Benefits	
				Land Use	Transportation	Air Quality	Water	Energy	Open Space	Economy	Security	Solid Waste	Public Health	Climate Change
SCAG Policies (SCAG policies shall be subject to consideration for future Overall Work Plans)														
		X	EC-1 SCAG shall form an active Prosperity Partnership, a coalition of public and private entities, dedicated to developing and implementing a common economic strategy for the SCAG region.							X				
		X	EC-2 SCAG shall partner with institutions that will help develop global trade logistics infrastructure needed for local businesses to remain competitive.	X						X				
		X	EC-3 SCAG shall partner with economic development organizations to assist the region in attracting and retaining both local and foreign investment.							X				
		X	EC-4 SCAG, in collaboration with local jurisdictions, shall increase awareness - both private and public sectors - of efforts currently underway supporting industry cluster formation in our region.							X				
		X	EC-5 SCAG shall encourage regional universities and business schools to explore opportunities to maximize benefits to the region from public dollars.							X				
		X	EC-6 SCAG shall inform stakeholders (workforce boards, community colleges and businesses) about the long-term demographic and workforce trends in the SCAG regional forecast.							X				
		X	EC-7 SCAG in partnership with local governments shall support K-12 education programs, particularly for at-risk students that help improve high school graduation rates and increase opportunities for all qualified students to attend and graduate from college.							X				
		X	EC-8 SCAG and local jurisdictions shall partner with workforce boards and community colleges in identifying specialized training courses that: • Meet current and future job needs. • Upgrade technological skills and open up career opportunities of adult and young workers. • Assist people adapting to change.							X				
		X	EC-9 SCAG, state agencies and local jurisdictions, should support programs that connect school district databases region-wide to track and assess student performance to better ensure a match between education and skill requirements and attainment.							X				
			EC-10 SCAG should develop partnerships that assist in creating a suite of technologies or a renewable portfolio of services that allow the SCAG region to plan for a greener, more sustainable economy.		X			X		X				X
		X	EC-11 SCAG shall actively engage environmental stakeholders to promote efficiencies, conservation, and renewable energy resources by working with the business sector and government agencies, such as the California Center for Sustainable Energy, the state's Environmental Agency (Cal-EPA), the California Transportation Commission, air districts and others.		X			X		X				X
		X	EC-12 SCAG shall partner with organizations that promote the creation of new advanced, environmentally friendly, sustainable technologies for all sectors in the region's economy.	X	X			X		X		X		X

City/State Policies	Legislation	Coordination	Constrained Policies	Potential for Direct/Indirect Benefits								Other Benefits		
				Land Use	Transportation	Air Quality	Water	Energy	Open Space	Economy	Security	Solid Waste	Public Health	Climate Change
	X		EC-13 SCAG shall continue efforts to leverage state infrastructure bond financing to our region to implement the enormously challenging goods movements and transit oriented development infrastructure.	X	X	X				X				
		X	EC-14 SCAG, in collaboration with state agencies and local governments, should support programs that develop workforce in the green technology sector.							X				
		X	EC-15 SCAG shall explore means of improving housing availability and pricing. Affordable housing shortage is compounding the difficulty for emerging industries to attract and retain demand positions, which are mostly the younger, more recently educated work force. Similarly, it also adds to the difficulties in attracting and retaining employees from other areas.	X						X				

ECONOMY

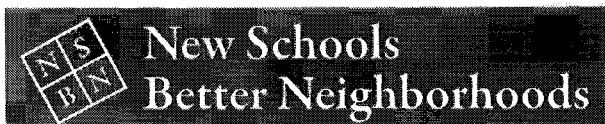
Policy Best Practices	Legislation	Coordination	Strategic Initiatives	Potential for Direct/Indirect Benefits										Other Benefits	
				Land Use	Transportation	Air Quality	Water	Energy	Open Space	Economy	Security	Solid Waste	Public Health	Climate Change	
SCAG Initiatives (SCAG initiatives shall be subject to consideration for future Overall Work Plans)															
		X	ECSI-1 SCAG, in collaboration with state agencies and local governments, should promote the region's livability and quality of life, along with its business climate and working conditions by support investments in attracting, retaining, educating and training a diverse, skilled labor force necessary to attract workers and firms.							X					
		X	ECSI-2 SCAG, in collaboration with state agencies and local jurisdictions, shall promote and support regional policies that: <ul style="list-style-type: none">• Promote sustainable economic development, within an ecological context, that uses resources wisely and sustainably and builds sustained economic health.• Reward local ingenuity, initiative, enterprise and creativity.• Give local governments the flexibility to attract needed businesses and jobs into their communities without compromising social or environmental standards.• Promote fiscal reform at the state, county and local level (involving sales, property and income taxes) to meet the regions capital investment needs of the region's economy. Reform must address increasing local control over school and transportation funds and de-emphasize local dependence on sales tax revenues. Overall, tax systems should be diverse enough to protect against over-reliance upon any small number of income streams.• Work with industries to diversify their industrial bases.• Help local firms replace jobs that cannot be retained.• Expand employment in existing high-wage service-sector firms.• Foster growth of small and medium-sized, locally-based firms	X						X					
		X	ECSI-3 SCAG and local jurisdictions shall support development of workforce strategies that upgrade skills and open up career opportunities for adult workers who need to adapt to change.							X					
		X	ECSI-4 SCAG in partnership with local jurisdictions shall support an increase in opportunities for immigrants to learn English at convenient times and locations							X					
X	X	X	ECSI-5 SCAG, in collaboration with state agencies and local governments, shall encourage industries to incorporate more energy efficient resources into their products.					X		X					X
X		X	ECSI-6 SCAG and local jurisdictions shall support efforts to increase employment in green, sustainable technologies and/or related industries.							X					

ICM/Best Practices	Legislation	Certification	Strategic Initiatives	Potential for Direct/Indirect Benefits									Other Benefits	
				Land Use	Transportation	Air Quality	Water	Energy	Open Space	Economy	Society	Solid Waste	Public Health	Climate Change
		X	ECSI-7 SCAG shall promote the implementation of the Southern California Regional Strategy for Good Movement Action Plan, which is based on three principles: <ul style="list-style-type: none">• International trade can create good job opportunities and raise real income levels for the SCAG region. To benefit from the growth in international trade expected, while remaining globally competitive, significant investment is necessary to improve the efficiency and expand the capacity of the region's goods movement infrastructure. Such changes must also occur within a context of environmental quality, environmental justice and respect for local communities.• Improvements to the goods movement system should not come at the expense of other transportation investments nor should improvements by only the burden of local, regional or state government.• Investments in the regional goods movement system should be made to realize regional benefits that have statewide implications		X	X				X			X	
X		X	ECSI-8 SCAG in collaboration with state agencies and local governments, should support policies such as: <ul style="list-style-type: none">• Market-based emissions trading programs that use a cap with progressive reductions of the cap overtime.• Legislation that promotes "green building" through a mixture of regulation and incentives.• Clean air plans that reduce port-generated pollution from airplanes, vessels, trains, trucks and terminal operating equipment by 45% over the next five years.	X	X	X		X		X			X	X
X		X	ECSI-9 SCAG, in collaboration with state agencies and local governments, should support policies that streamline the permit process and regulatory requirements imposed upon developers so as to eliminate excessive review time, cost and inefficiency.	X						X				
X		X	ECSI-10 State agencies and local governments should reform the state-local government fiscal relationship to help achieve sound, sustainable development. If government is going to "incentivize" the behavior of its governmental institutions, the incentive needs to be in line with its overall goals and objectives (e.g. making affordable workforce housing available). Local jurisdictions working through their representative advocacy groups (e.g. the League of National Cities) need to work with the state to balance the "fiscalizations" of the land use impacts, moving towards making cities fiscally ambivalent over using land for retail or housing purposes.	X						X				

Footnotes

- ¹ Barrett, James P. and J. Andrew Hoerner. Economic Policy Institute. Clean Energy and Jobs: A comprehensive approach to climate change and energy policy. (2002).
- ² Roland-Holst, David. Economic Growth and Greenhouse Gas Mitigation in California. August 16, 2006.
- ³ Title 24, Part 6 of the California Code of Regulations sets energy efficiency standards for residential and nonresidential buildings.





Education Essay

Creating Healthy Schools and Communities Through Joint Use Planning

The intent of this special focus essay is to begin a regional dialogue about the significance of education in the context of regional planning. This essay provides a starting framework to set the stage for further study and more focused planning work in the future. It highlights the importance of re-thinking the role of schools in their communities through joint use siting. No policies are associated with this essay.

OVERVIEW

By the year 2020, California's population of 33 million is projected to reach 45.3 million, an increase of 37 percent. At the current rate, the state is adding nearly 4 million people, or the equivalent of the population of Los Angeles, every seven years. Pressures of growth are taxing the physical infrastructure. State mandated reforms in educational practices, including bold measures like class size reduction, have created the need for more and better educational facilities. Poor planning decisions are stretching other forms of public infrastructure to the limit and draining economic vitality from cities and towns. A new framework is needed by which current programs, procedures and policies developed at every level of state,

regional and local governance can coalesce to address these challenges with smarter strategies for planning, investment and implementation.

Smarter planning for education means siting and designing schools that serve as centers of their communities, a concept endorsed by the U.S. Department of Education and leading national educational facilities planning organizations. The concept calls for gymnasiums and play fields that double as community open space and recreation centers; auditoriums that serve as community theatres and meeting venues; and incorporating centralized libraries, health information clinics and other community services into school facilities that are designed for greater parent and community access and engagement. Schools designed as the vital centers of community can also leverage a wide range of community resources – such as museums, zoos, and other existing facilities – to create integrated learning centers.

Developing joint-use schools that serve as centers of their communities is a concept that also has implications for the so-called "smart growth" strategies for urban and regional planning. Over the past thirty years, California's growth pat-



THE LINK BETWEEN NEIGHBORHOOD AND SCHOOLS

Studies conducted by both UCLA's Center for Healthier Children, Families, and Communities and The Advancement Project, a policy action group based in Los Angeles, confirm that deteriorating schools and neighborhoods disproportionately affect the life prospects and school readiness of poor children living in inner-city communities and in low-income suburban enclaves. More specifically, the physical and social health of entire neighborhoods remains at risk when the institutions that we expect to educate and support children have been relegated to second- and third-rate status in our communities.

tern has consumed tremendous quantities of land for sprawling low-density development, with the car and its attendant infrastructure – streets and highways, street parking, and parking lots – taking up at least a third of all developed land. This strategy for accommodating growth also produces more traffic congestion and loss of productivity; air pollution and its environmental and public health impacts; the loss of open space; the inability of many to reach jobs and services; and the isolation of children from the elderly among other social and environmental problems.

NEED FOR JOINT-USE COMMUNITY-CENTERED DEVELOPMENT

Families with infants, young children and little economic means are seriously challenged in Los Angeles County. The wages and formal education of these children's parents often fall well below minimal standards required for daily living, not to mention advancing family opportunities. Public schools experience severe overcrowding and, along with their neighborhood public parks, have physically deteriorated with lack of maintenance and the impacts of gangs and crime. These low-income families have inadequate access to day care, early childhood education facilities, family resource centers and health clinics. The housing available in their communities often is in substandard condition. Compounding these community deficits, older inner-city and inner-suburban neighborhoods of the Los Angeles Basin have little available open land and,

until very recently, have lacked the investment capital necessary to build new infill housing, preschools, day care, pocket parks, branch libraries and the community amenities that help revitalize neighborhoods and nurture the families who make up those neighborhoods.

Two seminal reports published in January 2007 further highlight the current pressing need for broader community development opportunities:

- The Advancement Project's "Citywide Gang Activity Reduction Strategy: Phase 3 Report" documents the impact of gang violence for the past 20 years in Los Angeles. Specifically, this report advocates that "comprehensive, neighborhood-based, school centered-strategies for effective prevention, intervention, and community development will be needed in order to pull sliding communities' with emerging violence back to safety and keep safe areas safe." This study concludes that the solutions to the gang crisis in Los Angeles "require cross-silo creativity, bold leadership, smart strategy, and sustained focus."
- Mayor Antonio Villaraigosa's report entitled "The Schoolhouse Framework" illustrates the need for new and innovative ideas for realizing a great public education for every child in Los Angeles. Specifically, the Mayor's report calls for schools to be "neighborhood centers" with strong family and community involvement. The Mayor proposes that this "neighborhood centered" model support schools by establishing relationships with a broad

range of partners including parent groups, local businesses, health care agencies, libraries, parks, and others

Failing to build our public schools, especially in poor communities, as mixed-use, family resource centers, as holistically integrated centers of community learning, not only is fiscally inefficient, but also places the core principles of equity and justice at risk.

CHALLENGES OF JOINT-USE COMMUNITY-CENTERED DEVELOPMENT

One of the largest statewide expenditures in public infrastructure goes to building and maintaining public schools. Public K-12 school enrollment has more than tripled in the past 50 years. The estimated growth in student enrollment is approximately 50,000 students annually. New enrollment records will continue to be set for the next nine years, increasing to an estimated 6,180,921 students in K-12 public schools by the 2007/2008 school year. This constitutes a total increase of 547,275 students, or 10 percent between 1997 and 2007. This estimate includes a decrease of 345,193 Anglo students and an increase of 800,000 Hispanic students, indicating the current and continuing demographic trend toward greater diversity, but, in part, also the decision of many Anglo parents to leave the public school system.

The renovation and replacement of educational facilities is currently in a state of crisis. It can take up to seven years to run

the gauntlet of local and state approvals and procedures before a school is ready to serve its constituents. As a result, school boards and building officials are working hard to get facilities on line faster. Larger and larger schools are being built in an attempt to address the problem. In an attempt to save time and money, districts are sometimes forced to replicate building plans that are outdated with respect to current educational research and teaching strategies. In most cases, projects move forward without much involvement from students, parents, educators and community members, all who have a long-term stake in the outcome. The result is often community alienation, disenfranchisement or even backlash.

There is a woefully inadequate allocation of time and money for planning how schools will fit into their communities; how the efficiencies of building larger and larger schools may not be justified in light of critical social and educational consequences; how combining school and community uses could produce more efficient and community centered environments for learning; or even for adequately identifying risk factors like building on toxic waste sites and other environmental hazards that can lead to mistakes at a scale that would have once been considered unimaginable.

The current need to renovate or replace educational facilities presents an opportunity for citizens, educators and planners to take a much smarter view of the design of learning environments. This "smarter" view can include everything from how learning spaces are designed to the process used to plan and

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2008



SCHOOLS THAT SERVE THE COMMUNITY

Schools should serve a variety of community needs in partnership with a wide spectrum of public, civic and private organizations, including:

- ▶ Provide spaces for public meetings and activities
- ▶ Provide access to communications technology
- ▶ Help meet the leisure, recreational and wellness needs of the community
- ▶ Support relationships with businesses that are productive for students and supportive of the local economy

Provide spaces that facilitate the use of external experts and skilled community volunteers for a variety of functions, including mentorships, apprenticeships and work-based and service learning

design them. More traditional educational facilities were once designed to sustain a model of education characterized by large-group, teacher-centered instruction occurring in isolated classrooms. But current knowledge and research about learning calls for new models.

SMARTER DESIGN STRATEGIES

Smart school planning and investment means replacing the current factory schools with facilities that support these and other examples of current best practices and ongoing research in the learning sciences. This means, among other things, that school populations should be significantly less than previously projected, and that large school populations may in fact be detrimental to the learning process. The development of smaller schools on smaller sites can also save time and money and put schools closer to parents and students.

There are also opportunities to accommodate more efficient and productive uses for educational facilities. For the most part, school facilities in California have been, and continue to be, designed and constructed to serve a specific educational purpose based on a limited educational function. Most educational facilities operate during a 7-8 hour time frame as stand alone institutions, with limited access or joint use by other community organizations. In most cases, the auditoriums, sports facilities, food service, libraries, media center, computer labs and other specialized areas of the school are available for use by the general public only on a very limited basis. Thus,

local municipalities must provide duplicate facilities to serve the same functions, with separate budgets for capital improvements, staff and operating expenses.

Smarter designs for new or renovated facilities can accommodate direct community access to spaces like libraries, gymnasiums, auditoriums, performing arts, athletic and recreational spaces that can serve the broader needs of the community. Instead of being designed for a limited time frame of 7 - 8 hours every day, combining community uses can produce facilities that operate 12 - 14 hours, serving a wide range of community needs that can also include things like health clinics, counseling centers and other social services. These designs can be implemented without jeopardizing the health and safety of students, by having certain community activities take place during school hours and others limited to evenings and weekends. The result of these smarter and more efficient joint use design strategies is to reduce duplication of community infrastructure.

Today's educational facilities should also be designed to strengthen the integral relationship that exists between a school and its community in other ways. When implemented through a community-based planning process, the results can also include increased community engagement and support for a wide range of cultural, social, economic, organizational and educational needs. A national movement integrating schools more closely with the community is growing, with support from the U.S. Department of Education and other organizations.

Smarter schools should be inviting places rather than foreboding institutions. Their locations should encourage community use and their shared public spaces should be accessible - day and night, all year round - to the community. Today we know that 12 or 14 years of learning will not be enough to equip people for the rest of their lives. We can't afford to think of graduation as a finish line, and that means that one of the most important end products of schools needs to be citizens who have learned how to continue to learn. Schools should support learning for people of all ages. In short, school facilities should allow access to flexible and comprehensive programs to meet all learning needs. They should provide space and programs for everything from early learning to adult education and training.

Smarter school planning and investment can also extend the learning environment beyond the traditional school site by creating schools in non-traditional settings. When community sites become destinations for educational field trips and extended academic learning centers, the links between school and community are strengthened. But these extensions are not limited to field trips alone. Through partnerships between school boards and other community organizations, a wide variety of community resources like museums, zoos, parks, hospitals and even government buildings can be enlisted to serve as full-time integrated learning centers. In this way, the school is not only the center of the community, but the whole community can also be seen as the center of the school - school as community and community as school - a learning community.

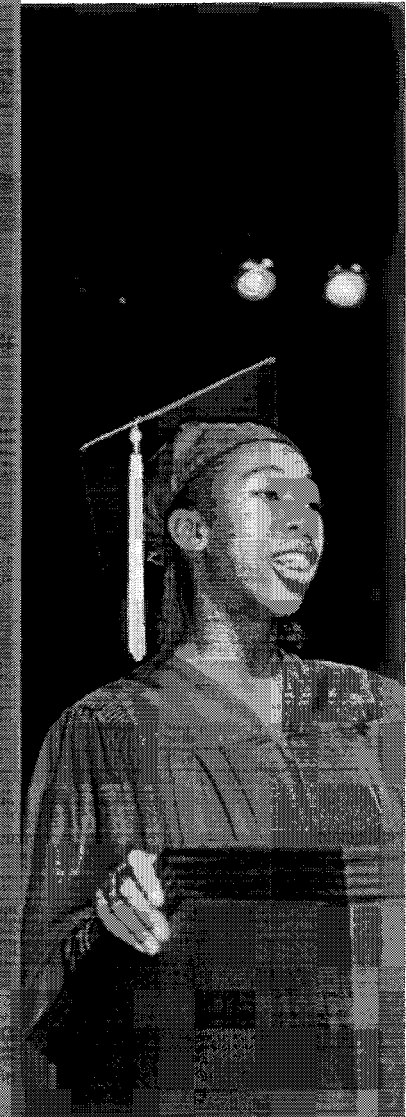
All of these examples point to ways that schools can better serve as the center of their communities, either by playing a more integral role as a community activity center or by extending the learning environment further out into the community to take better advantage of a wider range of community resources. Schools that are more integrated with their communities in these ways can strengthen a community's sense of identity, coherence and consensus. Like a new version of the old town square, they can serve as a community hub, a center for civic infrastructure, a place where students and others can learn to participate and support the common good.

EXEMPLARS OF JOINT-USE COMMUNITY-CENTERED DEVELOPMENT

City Heights (San Diego, California)

The City Heights Initiative is an outstanding case study for how leveraging limited public resources and employing a collaborative land-use planning strategy can serve as a catalyst to widespread neighborhood revitalization.

City Heights in San Diego's Mid-City area is a community of 73,000 people on approximately 2,062 acres and was approved as a redevelopment project area in 1992. At the time of plan adoption, City Heights had no center, no focus, and little to no community infrastructure. It was a victim of physical and economic blight. The area's crime rate was higher than the



DESIGN FOR LEARNING

At a recent national conference focused on the design of learning environments, a set of national design principles were identified and adopted. These design principles call for educational facilities and designs that will:

- ▶ Enhance teaching and learning and accommodate the needs of all learners;
- ▶ Serve as centers of community;
- ▶ Result from a planning/design process involving all stakeholders;
- Provide for health, safety and security;
- Allow for flexibility and adaptability to changing needs.

city as a whole, over one-third of the residents lived below the poverty line, and school performance was far below the city average. Although the area generated very little tax increment, the San Diego Redevelopment Agency did its best to develop and implement comprehensive redevelopment strategies to restore physical and economic health to the neighborhood, unfortunately with no significant success. In 1996, Sol Price, the founder of The Price Club and Price REIT decided to expand his retail development activities into the inner city and tap an underserved market. Price, along with William Jones, a former San Diego City Councilman, formed a company named CityLink Investment Corporation to implement the idea. When Vons, one of only two supermarkets in the neighborhood, closed down, Price and Jones saw an opportunity to build a retail project. However, soon after approaching Vons, they discovered that the City had already bid on the property with the intent of building a police substation. During this same time, the City sponsored an economic development and crime summit to devise new solutions to provide critically needed public assets for the residents of the City Heights neighborhood, including a police substation and public elementary school. It was at this moment that Jones saw an opportunity to develop not just a retail project but to create the necessary components of a healthy, vital community through a collaborative, community-driven revitalization effort.

Price and Jones committed to employing holistic strategies of redevelopment and making the redevelopment effort community driven. The Urban Village, as the initiative was dubbed,

focused on a seven square block area, totaling nearly 38 vacant acres with four city streets. Price and Jones believed that a strong urban core of facilities and services was essential to a healthy community, and, ultimately, the success of their retail project. As an initial step, they provided the funding to initiate a master planning and community outreach strategy for the Urban Village concept. The goal was to develop a master plan that encouraged and facilitated a synergistic around-the-clock relationship between public, community, and educational facilities.

Through the community-focused master planning process, two critical residential demands were raised. The first was to improve public safety. Almost unanimously the residents identified public safety as one of their paramount concerns and many expressed uneasiness at the fact that the area did not have its own police substation. The City agreed to incorporate a substation in the Urban Village master plan and to relate the building design to the community. The substation was equipped with public meeting rooms to provide a safe place for community members to meet and foster interaction between the community and the police. Most creatively, the substation was intentionally situated in the same building as the community gymnasium in order to build positive connections between the police and the youth of City Heights. The police substation as the first development project was key to the successful implementation of the Urban Village. It provided the focal point of the Urban Village concept and allowed other investments to go forward. The second key development of the Urban Village

concept was the new Rosa Parks Elementary School. During community meetings, many residents expressed the need for a new school.

The resulting increase in median home values is astounding. In 1996, prior to implementation of the Urban Village initiatives median home values were approximately \$80,000. By 2002, the entry price for a single-family home was \$160,000. While this is great news for the City Heights community, there is a concentrated effort to ensure that quality affordable housing is built so that residents of City Heights can remain in the community. Other outcomes of the City Heights Urban Village are extraordinary. Tax increment financing for the project area was non-existent prior to the Urban Village project and had more than tripled by 2002. This provides the Redevelopment Agency with resources with which to enhance and expand redevelopment efforts for the area and beyond. Additionally, and just as important, there is an amazing sense of empowerment to the community and a renewed sense that things can change for the better. People are taking pride in their neighborhood. The physical space is much more visually appealing, and commercial developers and new businesses are investing in the area. The community now has a center. The City Heights model demonstrates that articulating a clear vision, seizing opportunities to leverage public resources, employing a collaborative land use planning strategy, and securing public sector endorsement, can lead to the restoration of healthy neighborhoods and communities. However, the critical component to the overall success of the Urban Village concept was having an independent,

non-profit organization serve as a predevelopment partner to the City and CRA, with the flexibility to react appropriately to any new challenge, access to predevelopment funding and the willingness to take on risk inherent in predevelopment activities.

Elizabeth Street Learning Center (Los Angeles, California)

In 1991, in response to President Bush's "Goals 2000", the New American School's Development Corporation (NASDC) launched a nationwide proposal. The Los Angeles Educational Partnership, United Teachers Los Angeles (UTLA) and LAUSD formed a partnership to write a design for a twenty-first century school. The resulting design was one of only 11 proposals selected by NASDC and in 1992 Elizabeth Street School became the first "Urban Learning Center" site. Elizabeth Learning Center (ELC) is a model site for the Urban Learning Centers (ULC), one of the eight designs of the New American Schools of the 21st Century. The center is located in the City of Cudahy and is a Los Angeles Unified School District (LAUSD) school. ELC serves over 3,000 Pre-K through 12th grade students.

The Urban Learning Center design restructures the school around 3 key components: shared governance, innovative curriculum and instruction, and comprehensive student and family support (Learning Support). ELC is a recognized model for



COLLABORATIVE FUNDING FOR ELC

The early childhood programs at ELC are funded by State Pre-school funds, LAUSD integration funds, and grants and partnerships with Saint Francis Medical Center in Lynwood, the Los Angeles County Office of Education – Head Start Division, the UCLA Center for Mental Health in Schools, BHCFC, and the College and Education Resource Centers Initiative at California State University Dominguez Hills, California State University at Los Angeles, UCLA and the University of Southern California provide interns in social work and marriage, family and child counseling. Sustainable funding sources include Title I dollars. Support from city government and state representatives is also critical.

the implementation and refinement of the Learning Support component.

The vision at ELC is to enable all children to learn by addressing their educational, social, mental health and health needs in a comprehensive and integrated manner in collaboration with public, private and civic partners. Key components of the Learning Support model at ELC include:

- Recognition of Learning Support as an integral part of the school infrastructure, including space, staffing and budget allocations for its maintenance and growth
- Partnership with local medical center to provide an on-site health clinic and mental health services provided by university partners
- Strong community outreach including over 1,000 hours per month in parent/community volunteers
- Adult education that serves over 600 adults daily on campus and additional adults at community sites and through distance learning
- High school academies to provide career and college guidance for students including mentor and internship programs
- Development of Early Literacy and additional Early Childhood programs located on site in partnership with LAUSD Adult School Division and Head Start

- After-school tutoring programs
- School campus has extended hours 7-9 four days a week and is open Saturdays.

ELC is also known for its comprehensive early childhood programs, and is seen as a model School Readiness site by the California Children and Families Commission.

SUMMARY

The projects undertaken by third party intermediaries invariably represent a variety of community-specific situations that reflect the input of the local community in the planning and design process. The opportunity for the community to become engaged in this process provides a strong sense of ownership for the project that becomes evident in their involvement in the funding and construction phases as well as during operations where the neighborhood's sense of ownership prevents vandalism or abuse. Similarly, these exercises provide residents with the opportunities for involvement and the development of skills that are often manifested in other civic engagement processes that the residents become involved with including neighborhood councils, school PTAs and local community-based programs.

Now that this portfolio of models exists, we must take the joint-use concept to scale which requires legislation at the state levels to develop new rules, regulations, and funding vehicles to facilitate the easy access to existing and future joint-use funds

since even when those limited funds exist the methods for accessing them are cumbersome and prevent sufficient access to them which often leads to the concerns about underutilization of existing funds in the pursuit of additional resources. The short-term availability of local, regional, and state bonds for education, libraries, healthcare, criminal justice, and other program facilities makes the immediacy of these projects that must be planned, designed, and implemented as quickly as possible or face loss of potential funding very important. As Robert Hertzberg, former speaker of the California State Assembly has frequently said "This is a once in a decade, once in a lifetime opportunity ..." to access these limited funds.

CASE STUDY

The Role of Third Party Intermediaries: New Schools Better Neighborhoods

New Schools Better Neighborhoods (NSBN) was formed to advocate for a vision of public facilities, most especially schools, as vital community centers, and to assist families and neighborhoods in creating built models of community centered learning centers. NSBN is an independent, professionally managed, community-led master planner, focused on leveraging billions of dollars in state and local public facility bonds for the benefit of families and children. They collaborate with community-based partners to facilitate the planning and construction of joint-use urban learning centers that are intended to become the vital center of the neighborhood. These facilities are designed

to offer an array of social services accessible to all community residents and local stakeholders from dawn to dusk.

NSBN's joint-use philosophy reflects the focus on ameliorating the long-term academic and facility deficits that plague low-income communities. These deficits, along with the lack of early education, recreation, and access to healthcare, contribute not just to reduced school attendance, poor academic achievement, and high dropout rates, but also to the involvement of students in gang activities that threaten safe passage to, from, and within, their schools.

An organization like NSBN makes available to project partners specific skill sets they neither currently possess nor can afford. Foremost among these are professional expertise, planning process facilitation, access to business and political leadership to form relationships in support of projects, and a formalized independent analysis of facilities that extend beyond the bounds of the specific project into the community. As an independent mediator, NSBN fully engages stakeholders in the creation of local community learning centers. A few examples of both past and current project partners include the Los Angeles Unified School District (LAUSD), UCLA Center for Healthier Children, Families and Communities, Trust for Public Land (TPL), Boys and Girls Club, Los Angeles Public Library (LAPL), United Methodist Ministries, and TreePeople.

The NSBN portfolio of projects in Southern California includes:

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REGIONAL COMPREHENSIVE PLAN



CITIES COUNTIES SCHOOLS PARTNERSHIP

The Cities Counties Schools (CCS) Partnership was established in 1997 to promote the development of public policies that build and preserve communities by encouraging local collaborative efforts among California's cities, counties and school boards and districts.

Joint use planning and development is one of the many collaborative programs (along with shared governance, planning, funding and other before and after school support programs) endorsed by CCS. The CCS Partnership is a joint effort of the League of California Cities, California State Association of Counties (CSAC), and California School Boards Association (CSBA).

- Whelan Elementary Project (Lennox): The elementary school is being expanded to include space for joint use facilities that will include a preschool, Healthy Start, School Readiness, and adult education programs
- Bodger Park Project (Lawndale): An underutilized two acre area of the park, owned by Lawndale Elementary School District, was originally intended to house only a new preschool. With NSBN's help, it has been re-designed to include a preschool, early education, adult education, family counseling and health care services, a public garden, a walking trail, and a possible gymnasium. The park is located in a densely populated neighborhood, making it a commodity in an area where green space is not readily accessible.
- Westlake-Gratts Project (Pico Union): At the request of the Mayor of the City of Los Angeles and a local City Councilmember, NSBN worked in partnership with the City of LA and LAUSD to intelligently plan for and locate public investments in childcare, housing, schools and other community essentials in this critically impacted neighborhood.

2008

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REGIONAL COMPREHENSIVE PLAN

Mission Statement

Leadership

Vision

Progress

LEADERSHIP, VISION AND PROGRESS WHICH PROMOTE ECONOMIC GROWTH, PERSONAL WELL-BEING, AND LIVABLE COMMUNITIES FOR ALL SOUTHERN CALIFORNIANS.

The Association will accomplish this Mission by:

- Developing long-range regional plans and strategies that provide for efficient movement of people, goods and information; enhance economic growth and international trade; and improve the environment and quality of life.
- Providing quality information services and analysis for the region.
- Using an inclusive decision-making process that resolves conflicts and encourages trust.
- Creating an educational and work environment that cultivates creativity, initiative, and opportunity.

Funding: The preparation of this document was financed in part through funds from the Federal Highway Administration and Federal Transit Administration. Additional financial assistance was provided by the California State Department of Transportation.

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Tribal Government Representative: Andrew Masiel, Sr., Pechanga Band of Luiseno Indians

Orange County Transportation Authority: Art Brown, Buena Park

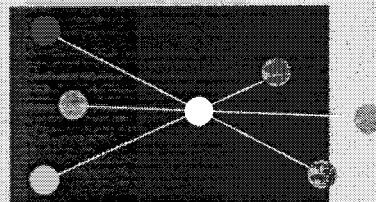
Riverside County Transportation Commission: Robin Lowe, Hemet

San Bernardino Associated Governments: Paul Leon

Ventura County Transportation Commission: Keith Millhouse, Moorpark

10/24/07

REGIONAL



Comprehensive Plan



SOUTHERN CALIFORNIA
ASSOCIATION OF GOVERNMENTS

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Comprehensive Plan


Open Space & Habitat
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Water
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Security & Emergency Preparedness
Economy
Transportation

Helping Communities Achieve A Sustainable Future

OVERVIEW

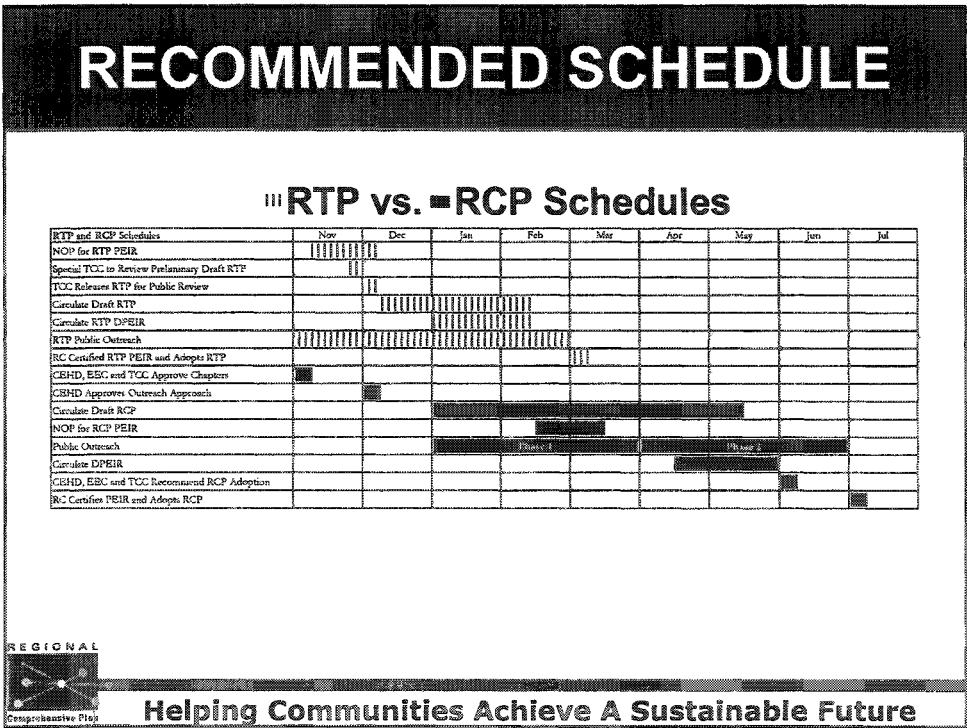
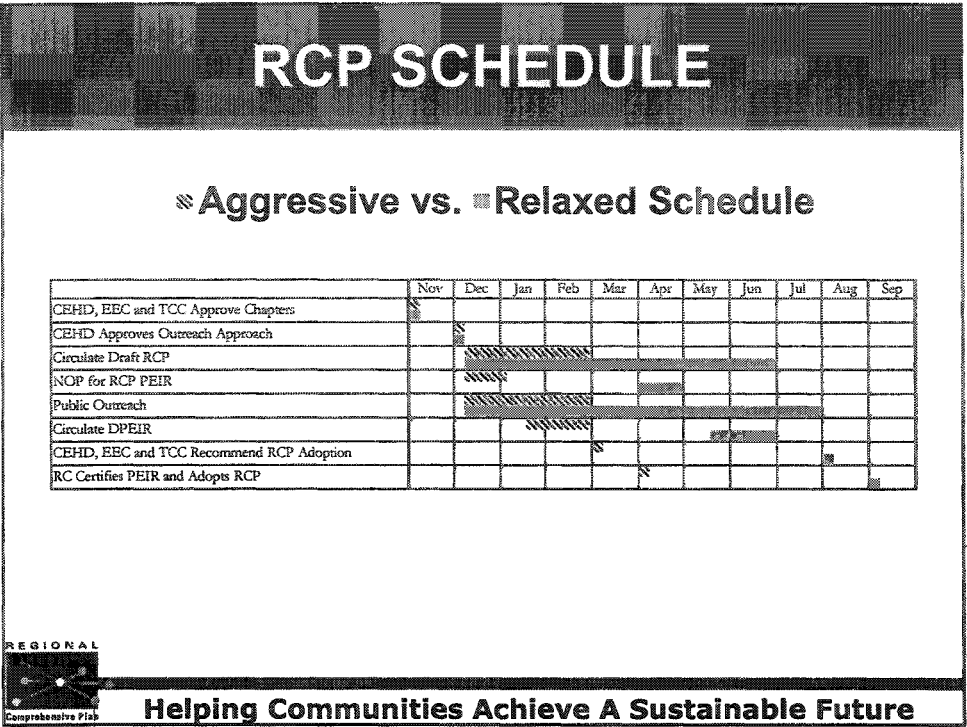
- **November 1**
 - CEHD, TCC, EEC approved chapters for release
 - **Regional Council**
 - Separate EIRs for RCP and RTP
 - Additional \$150,000 for RCP EIR work
 - Complete RCP in expeditious manner
 - **Proposed RTP Schedule**
 - TCC Workshop Nov 27
 - Draft RTP Release Dec 6
 - Adoption Spring 2008

REGIONAL



Comprehensive Plan

Helping Communities Achieve A Sustainable Future



SCHEDULE

- **December 6, 2007: CEHD approves the RCP process, outreach strategy, and release of Draft RCP**
- **December 2007 – March 2008:**
 - Outreach Phase 1: Develop base of awareness of sustainability and RCP issues through outreach while minimizing impacts to key RTP stakeholders
- **Mid-February 2008: Release Notice of Preparation for RCP PEIR**



Helping Communities Achieve A Sustainable Future

SCHEDULE

- **April – June 2008:**
 - Outreach Phase 2: Expand public outreach, conduct regional workshops on policy directions for RCP, additional focused outreach to RTP key stakeholders
- **Mid-April 2008: Circulate Draft RCP PEIR for public review and comment**
- **June 2008: CEHD approves Preliminary Final RCP and forwards to Regional Council**
- **July 2008: Regional Council action on the Final RCP and certification of PEIR**



Helping Communities Achieve A Sustainable Future

RECOMMENDED SCHEDULE

- **Consistent with Regional Council direction**
- **Avoids schedule conflict with RTP**
- **Ensures adoption of RCP after RTP**
- **Extended public review and comment**
- **Enhanced public outreach**



Helping Communities Achieve A Sustainable Future

OUTREACH GOALS

- **Build awareness of sustainability issues and the need for action**
- **Build support for the RCP across region and stakeholder groups**
- **Lay groundwork for ongoing regional Action Plan**



Helping Communities Achieve A Sustainable Future

DRAFT RCP RELEASE

- Formal release of Draft RCP early January 2008
- Extensive distribution to RTP and RCP stakeholders
- Released in three formats
 - Interactive web-based version
 - CD-ROMs
 - Hard copies
- Extended review period through May 2008



Helping Communities Achieve A Sustainable Future

OVERALL OUTREACH PLAN

- Two phases
- Phase 1
 - Through March
 - Pre-RTP adoption
 - Develop awareness of sustainability and RCP issues
 - Sustainability Conference
 - Develop institutional framework
 - Survey region's current efforts Improve print and electronic outreach
 - Engage stakeholders



Helping Communities Achieve A Sustainable Future

STAKEHOLDERS

- **SCAG Committees**
- **Public Sector**
 - e.g., local governments, resource agencies, transportation commissions
- **Private Sector**
 - e.g., development community, conservation organizations, economic development alliances
- **Public at-large**



Helping Communities Achieve A Sustainable Future

SUSTAINABILITY CONFERENCE

- **Goals**
 - Expand awareness of sustainability issues and the need for action
 - Highlight other regional efforts to promote integrated, sustainable planning
 - Use input to refine RCP recommendations



Helping Communities Achieve A Sustainable Future

SUSTAINABILITY CONFERENCE

- **Agenda**
 - Define regional resource challenges
 - State of California perspective
 - Discuss state of sustainability planning in region
 - Panel spotlighting regional sustainability programs
 - Identify next steps



Helping Communities Achieve A Sustainable Future

OVERALL OUTREACH PLAN

- **Phase 2**
 - April through June
 - Post RTP adoption
 - Expand outreach
 - Workshops on policy direction for RCP
 - Focused outreach on key stakeholders



Helping Communities Achieve A Sustainable Future